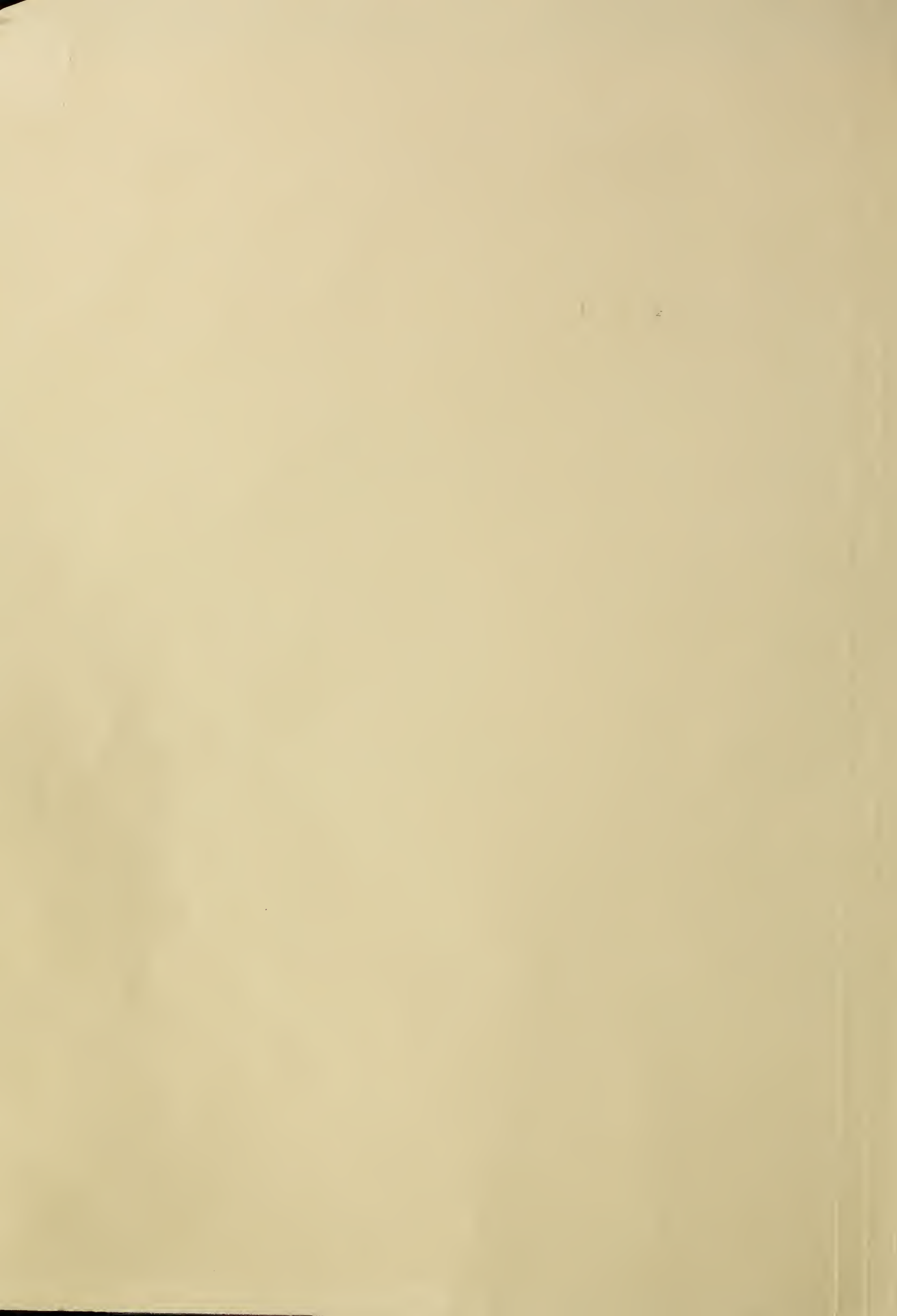


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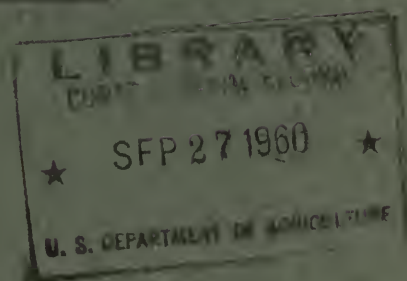
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June 1960

VETERINARY ADMINISTRATOR DEVELOPMENT PROGRAM



Animal Disease Eradication Division
in cooperation with
Animal Inspection and Quarantine Division

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

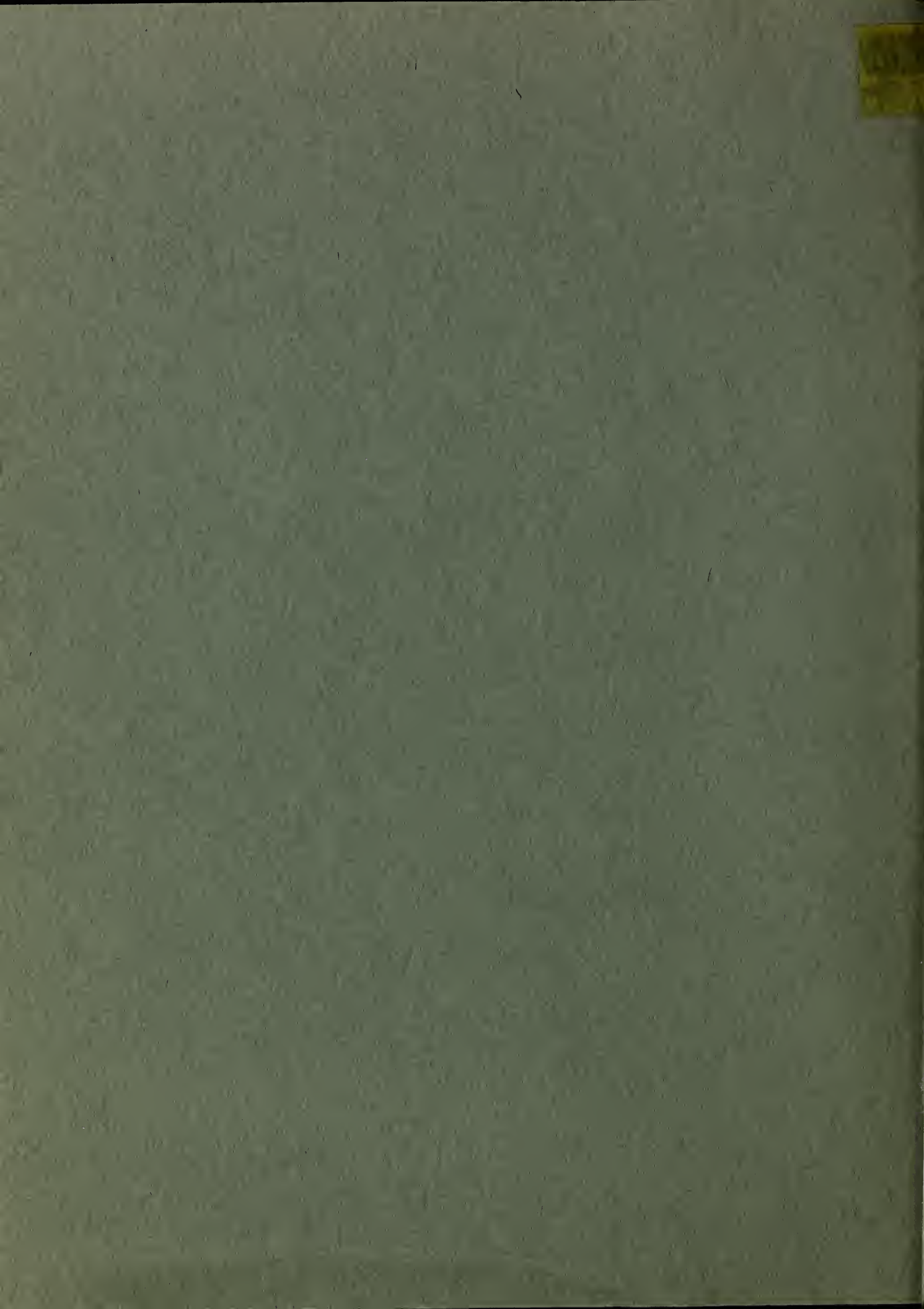


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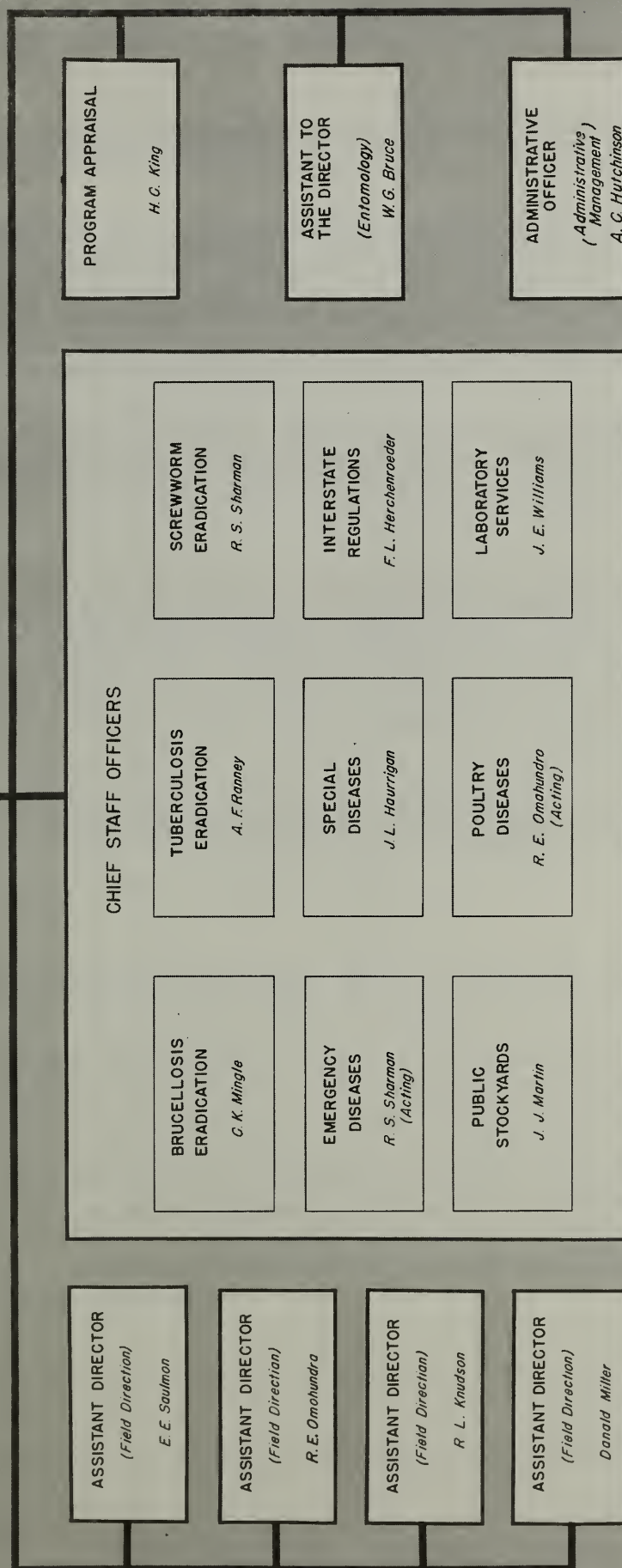
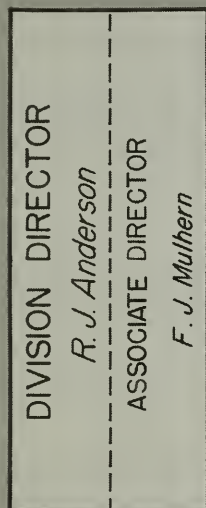
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The information on this chart is based on the functional chart in Administrative Memorandum 102.5 dated September 10, 1959

ANIMAL DISEASE ERADICATION DIVISION

The activities of the Animal Disease Eradication Division are divided into two major categories:

(1) Administering laws and regulations pertaining to interstate movement of livestock and poultry to prevent the interstate spread of diseases. This is further divided into (a) controlled interstate movements from areas under quarantine within the State because of the existence of a specific disease condition; (b) inspection and supervision over the interstate movement of livestock to facilitate the uninterrupted movement and marketing of healthy livestock and poultry--this activity conducted at public stockyards; and (c) administering the 28-hour Law which provides for the supervision of livestock while in interstate commerce to prevent inhumane handling through over-confinement without feed, water, and rest, in excess of 28 hours by railroad or boats.

(2) Cooperation with the various States in programs of disease prevention, control, and eradication. Cooperative programs may be divided into three categories: (a) Those major disease programs for which appropriated funds are specifically earmarked, such as tuberculosis, brucellosis, scabies, and ticks; (b) programs providing for the eradication of minor outbreaks of incipient and potentially dangerous livestock and poultry diseases; and (c) emergency disease programs, such as vesicular exanthema and foot-and-mouth disease, which are financed from funds made available through the medium of the Commodity Credit Corporation or other funds that may be available to the Secretary.

The Secretary of Agriculture is authorized by Congress to carry out disease prevention, control, and eradication programs either independently or in cooperation with the various States. For the effective administration of the wide range of regulatory activities of the Animal Disease Eradication Division, it is imperative that those in charge of administering the program at the various levels from Washington on down to the area supervisors be thoroughly versed in each activity. The Veterinary Development Training Program is only one phase of the Division's program to develop its employees in the arts and sciences needed to accomplish its mission of protecting the great livestock and poultry industries of this country against costly domestic and foreign diseases.

ADMINISTRATIVE OFFICE - ADE DIVISION

The Administrative Office is responsible for the program's administrative management aspects of the ADE Division. The office is organized as follows:

Administrative Officer - Administrative Management

Personnel
Budget and Fiscal
Administrative Services
Rapid Data Processing

The titles are descriptive of the primary functions. The Administrative Officer of each section is responsible for the establishment of policies and procedures covering assigned functions in a manner designed to give the maximum assistance to the needs of the various program staffs, and shares responsibility with the Division Administrative Officer for periodic reviews of field station administrative activities. Following is a brief resumé of additional activities and responsibilities.

Personnel

The Personnel Section counsels and advises with the Division program staff for the Administrative Officer in co-ordinating employment of the Division's personnel resources with fluctuating program requirements. This Section makes provisions for meeting the Division's needs, which will result in providing the necessary services in the most effective and efficient manner possible. There are more than 2,000 regular employees and approximately 7,000 fee testing veterinarians in the Division. The regular employees are divided into several categories, such as: Veterinarians, Quarantine Enforcement Officers, Livestock Inspectors, Stockyard Inspectors, Serologists, Medical Biological Technicians, and the clerical staffs in Washington and the field station offices.

This Section also assists the staff in determining the number of field employees needed in the several categories, is responsible for staffing, authorizes details and transfers, issues letters of authorization, and is responsible for and controls the personnel records of the Division. After program recommendations are made and decisions reviewed, the Personnel Division and the RBO Personnel Office process the Personnel Actions.

This Section is concerned with and has a part in employment, classification, training, safety, discipline, the Merit Promotion Plan, and Administrative Training activities.

Budget and Fiscal

This Section engages in budgetary planning and execution, financial systems recording and reporting and fund utilization analysis. Available funds are allotted by project to field stations for all States, Puerto Rico, Mexico, and the Division headquarters in Washington. Allotments cover the following categories of expense:

1. Salaries and employer contributions
2. Fee testing
3. Indemnity
4. Travel expense
5. Station expense

The allotments are based on budget estimates furnished by the station offices and the status or progress of the programs being carried on in each State as determined by program staff officials. Accounts are established in each of the Regional Business Offices and the Washington Finance Office for all stations on a quarterly basis. Ledger sheets are furnished periodically by the RBO's and W.F.O. reflecting the disbursements and obligations against these accounts. The accounts are then reconciled with the reports of expense by project and category as furnished by each field station. Many changes are made in the amount of funds available for individual station operations during the year. Funds are increased or decreased in accordance with program requirements, being withdrawn from one State and re-allotted to another State as program changes occur, thus maintaining maximum utilization of available funds.

Administrative Services

This Section has responsibility for planning, developing, and coordinating activities and procedures concerning procurement, personal property, communications, files, federal regulations, program aids, program records and reports, forms management and related matters, in accordance with program requirements.

Included in the procurement and property management functions of this Section is the responsibility to review requests for, and authorize purchase of equipment and material needed by the field forces. Requests for furniture and mechanical office equipment for our field offices and equipment for laboratories are approved or disapproved. Many types of equipment are used in the central brucellosis and mobile laboratories as well as specialized equipment used on other projects. There are approximately 1,080 motor vehicles and 41 trailer laboratories in use in the field at the present time. Efficient utilization of automotive equipment frequently requires reassignment from state to state based on program needs. Where and when automotive replacements should be

made is determined, predicated upon funds being available, after which ARS, Administrative Services Division, and the Regional Business Offices take the action necessary. Negotiations for source of supply contracts for cattle ear tags, vaccine, tuberculin, etc., are handled with the ARS Administrative Services Division. Space requirements, leases, rentals, etc., are reviewed and approved or disapproved prior to action being taken by the Regional Business Offices.

The prompt and accurate distribution of incoming communications, the dispatch of outgoing communications and the proper maintenance of the files resulting therefrom, are functions of utmost importance to any organization. These functions are handled in the mails and files group of this Section.

From program reports covering Animal Disease Eradication activities referred from the field, statistics are compiled on program records which are published monthly and receive wide distribution. Records are maintained of areas certified Brucellosis-free and those which have attained a modified-certified brucellosis status. Animal Disease Eradication Stations are notified before counties are due for brucellosis recertification and tuberculosis reaccreditation. In addition, special reports covering our activities are prepared for Agriculture Research Service, the Department and others as needed.

The visual aids group is an adjunct of one of the most important functions of the Division in that the slides, graphs, maps, and other materials prepared in cooperation with the information divisions of ARS and the Department, show the progress, accomplishments and goals of the various projects. This material is used in local and state veterinary meetings, farm bureau meetings, meetings dealing with a specific project, budget hearings, and congressional committees.

The Division's activities are carried out under a number of existing regulations. When new diseases are encountered, new regulations are often required; in other cases, amending an existing regulation is sufficient. With diseases such as vesicular exanthema, scrapie, scabies and ticks, it is necessary to impose Federal quarantines, and as the disease diminishes, the quarantine areas are reduced. When the disease is eradicated in a given area, the quarantine is released. Program determination as to action to be taken is referred to this unit which prepares the necessary documents and clears them through the Administrator's Office, and the Office of the General Counsel. Memoranda of Understanding between the States and ARS covering cooperative animal disease control and eradication projects are also prepared and routed to the proper officials for approval.

Rapid Data Processing

The Rapid Data Processing Section is responsible for co-ordinating program administrative management functions for Washington and field

operations utilizing data processing methods, procedures, and equipment to meet their specific needs.

At the present time, five (5) of the Division's field installations share jointly with the State through cooperative agreement the management responsibility for IBM equipment used to facilitate their operation. In situations of this nature, the functions of this Section include counselling with State and Federal officials concerning the advisability of installing Data Processing equipment, assisting in the planning and developing of policies and procedures at the State level where such equipment is installed, technical assistance in solving difficult problems at such installations and determining that new and improved methods, procedures, and equipment are fully utilized at all Stations.

Seven (7) additional States are utilizing Rapid Data Processing equipment, but not through cooperative agreement. . However, three of these seven States share jointly in the management responsibility, and the same counselling and assistance is given as for Federal and State installation sharing through cooperative agreement.

EMERGENCY DISEASES

The Emergency Disease staff is responsible for developing plans for eradication of any animal disease, now foreign to the United States, which may gain entrance into this country. This would include diseases such as foot-and-mouth disease, rinderpest, African Swine Fever, Contagious Bovine Pleuropneumonia and Teschen's disease.

Prior to World War II almost all livestock imported into the United States, with the exception of livestock from Mexico and Canada, came by ship. With the rapid expansion of air freight services, importations which formerly required weeks and even months, from origin to destination, are now accomplished over night. Time in transit is cut to a minimum and no longer provides a barrier to the introduction of foreign animal diseases.

Transportation of livestock within the United States for purposes other than slaughter has increased many fold since livestock trucks came into general use. It is not impossible or even unlikely that livestock, sold at a single auction market, at a one-day sale, may be trucked to dozens of localities in several States within 24 hours of the sale. In many cases livestock is returned to farms for additional feeding or dairy or breeding purposes. The possibility of a rapid spread of an animal disease within the United States is thereby greatly increased. It is the responsibility of the Emergency Diseases staff to recognize the changes that are taking place, not only in livestock transportation but in other phases of the industry, which may effect proposed eradication procedures. We must be prepared to handle the problems which result from these changes.

A proposed "Emergency Disease Eradication Organization" has been developed. This organization, modified to meet the needs of the individual States, has been adopted by most States. It is very difficult to get enthusiastic support for an organization of this type when no emergency exists. The effectiveness of the organization may never be tested. Civil Defense exercises in biological warfare have provided a "little" experience with the use of the "Emergency Animal Disease Eradication Organization" but education is the only tool we have in trying to maintain continuing interest. A better understanding of the destructive potential of foreign animal diseases should serve to interest livestockmen and disease control officials in the value of being prepared.

An "Emergency Animal Disease Eradication Guide" has been developed. This guide outlines in detail many of the administrative and technical phases of emergency operations. Two copies have been

distributed to each Veterinarian in Charge of ADE field activities with instructions to place one copy at the disposal of the State Regulatory Official. This guide should be of considerable assistance, particularly to the inexperienced, in handling any animal disease emergency.

We must continue to develop methods for rapid reporting of suspected foreign animal diseases. A delay of one or two days in reporting a disease, such as foot-and-mouth disease might easily increase eradication costs by millions of dollars.

VESICULAR STOMATITIS

The Emergency Disease staff plans the investigation (including diagnosis) of outbreaks of vesicular stomatitis, a vesicular disease which is endemic in some parts of the United States. There is a tendency on the part of regulatory personnel, livestock owners and practicing veterinarians, living in endemic areas, to become complacent towards VS. This could be very dangerous since it is possible that either vesicular exanthema or foot-and-mouth disease might make their first appearance in such an area and become widespread before being diagnosed. We must continue to point out to regulatory personnel, practicing veterinarians and livestockmen the dangers of being complacent concerning any unusual disease condition.

VESICULAR EXANTHEMA

The eradication of Vesicular Exanthema was announced by the Secretary of Agriculture in late 1959. This appears to be a first in Animal Disease Eradication history. It is the only animal disease ever to be completely eradicated from the world. The United States is the only country in which the disease was diagnosed. This is an example of the feasibility of the complete eradication of an animal disease; however, the announcement did not relieve us of the responsibility of continued vigilance to prevent the spread of VE should additional outbreaks occur.

We are now armed with the knowledge that feeding raw garbage to livestock is a factor which can contribute to the spread of animal diseases. With the exception of Alaska all States have laws or regulations prohibiting the feeding of raw garbage to swine. Continued periodic inspection of garbage feeding establishments to assure that garbage is being properly cooked is an essential part of animal disease control and eradication programs. The necessary inspections can be most efficiently carried out by assigning inspections to lay and veterinary livestock inspectors in the geographical areas in which they live and work.

ANAPLASMOSIS

Field trials are being conducted to develop and evaluate procedures for anaplasmosis control and eradication. Field trials have been limited in scope because of the shortage of anaplasmosis complement fixation test antigen. A comparatively large supply of antigen is now available and plans are being formulated to expand the field trials.

HOG CHOLERA

Increasing interest in hog cholera eradication is being demonstrated by members of the swine industry, livestock disease control officials and others directly associated with the problem.

More than half the States have banned the use of virulent virus in an effort to reduce the incidence of the disease. The ADE Division is working with swine growers and those closely associated with the swine industry to help evaluate the problems involved in dealing with hog cholera and to disseminate all available information on the subject.

TRAINING

Organization and coordination of ADE training programs is another responsibility of the Emergency Disease staff. This responsibility includes training for all ADE Division professional and technical employees, in technical skill, as well as supervision or management.

One example of our responsibility is the further development of the Veterinary Administrator Development Program (VADP). Suggestions for addition and deletions in the program are evaluated and the training program agenda is changed accordingly. We evaluate the various types of available training courses and recommend attendance at those which meet the needs of our Division. The need for training all ADE veterinarians in epidemiology has been recognized. Development of epidemiological training programs is underway and we are also taking advantage of available outservice training programs. Training in radiological defense, identification of screwworm larvae, scabies diagnosis, foreign animal disease diagnosis, and supervision and management are a few examples of the type of training programs needed and used in training ADE personnel.

The real key to effective training is the individual trainee. Does he want to learn? Has he been motivated by his supervisor to want to do a better job? Does the individual have the desire

to do a better job? A few of the specific types of training used by ADE have been listed but these programs meet only very broad needs for program specialists. The individual under the guidance of his supervisor must recognize his own need for training and plan accordingly. How does he get the training? Through his own initiative. By enrolling in training programs or courses designed to improve the individual. Courses such as public speaking, human relations, and management or supervision are available in most areas. In some cases, ADE may be able to assist you in securing needed training through the use of Public Law 85-507, Government Employees Training Act. The cost of books, tuition, laboratory fees, etc. may be paid by the Government for courses for which proper justification and approval are received.

The Division recognizes the need for continuing the development of all employees but only the employee can devise a program of self development which will meet all his needs.

BRUCELLOSIS CONTROL AND ERADICATION

Although the brucellosis problem now is receiving greater attention on a worldwide basis than ever before, this disease still constitutes a serious economic and public health threat. There is probably no disease of animals recognized at the present time that is more important than brucellosis from the standpoint of human health. It is because of these combined economic and public health aspects that eradication efforts are receiving strong support in this country.

Like most infectious diseases of animals, the control and eradication of brucellosis is based largely on the detection and elimination of infected animals, the prevention of exposure and the development of artificially induced resistance in otherwise susceptible livestock populations. It has been fully demonstrated that bovine brucellosis can be effectively combated along these lines with available tools and procedure.

Brucella Abortus Infection

Although the first confirmed evidence of bovine brucellosis in the United States dates back to 1910, it was not until 1934 that organized efforts were undertaken to control and eradicate this disease. Of the 3.3 million cattle tested during the first year of this program, 11.5 per cent were classed as reactors. This compares with a maximum of around 5 per cent animal infection for the country as a whole in the case of bovine tuberculosis.

For the past several years, brucellosis in cattle has been recognized as one of the most serious and widespread infectious diseases occurring among livestock in this country. While the incidence of the disease has been higher in the predominately dairy sections, it exists from coast to coast and border to border. Even though the incidence of brucellosis in strictly range cattle is comparatively low, the infection frequently assumes serious proportions in feed lots.

Brucella Suis Infection

Brucellosis was first identified in the United States as an infection of swine in December 1914. However, there is reason to believe that *Brucella suis* was present in this country long before that date. Inasmuch as no nationwide program for the eradication of this disease has yet been put into operation,

the true incidence of brucellosis in swine cannot be accurately determined. Limited records available on individual herd testing conducted in the Middle West have indicated an animal infection rate of between 3 and 5 per cent for that area. While the serious nature of swine brucellosis is well recognized by farmers, veterinarians, and public health officials in those sections that are affected, it is less important to the country as a whole than bovine brucellosis. It is entirely possible, of course, that with the advancement of the eradication program in cattle, a similar project may be required eventually for swine.

Brucella Melitensis Infection

The initial identification of caprine brucellosis in the United States was made in 1911 in the state of Texas. As in the case of swine brucellosis, information on the extent of Brucella infection in goats is inadequate at the present time. As might be expected, this disease appears to be confined largely in the South-Western States where most of the goat population is found. Based upon the results of scattered testing conducted in various sections of the country, it would appear that the incidence of Brucella melitensis infection in goats does not exceed 2 per cent.

Bovine Brucellosis Control and Eradication Procedures

Test and Elimination of Reactors

The nationwide campaign to eradicate brucellosis from cattle was inaugurated in the summer of 1934. In the beginning, this program was developed as a cooperative State-Federal undertaking in which eradication was based entirely upon the elimination of reactors to the blood serum agglutination test. At that time, there was considerable hope that this disease might be combated in the same manner as bovine tuberculosis, and with equal success.

Although a great deal was accomplished during the early years of the project by the test-and-slaughter method, it soon became apparent that complete eradication by this procedure alone would be very difficult to accomplish on a nationwide scale. Increasing evidence was developed to show that, because of inherent differences in the epizootiology of bovine brucellosis and tuberculosis, each would require somewhat different methods for control and eradication. Regardless of the procedures employed, it has been repeatedly demonstrated that the progress

made in various areas of the country is far more closely related to the thoroughness with which procedures have been applied than with actual methods themselves.

In other words, while there is a need for employing available methods under conditions best suited to their usefulness, it is likewise important that they be applied in a thorough and aggressive manner.

Variations in the types of herds affected with brucellosis, differences in the character of the disease as it affects various herds, and the degree and length of time infection has been present are important factors to be considered in the selection and application of appropriate means of control. The complex nature of this disease cannot be ignored if maximum results from any plan are to be achieved. The value of test and slaughter has been convincingly demonstrated when used under suitable conditions. However, one of the greatest dangers connected with such a program is the matter of replacements. Herds in which heavy losses have been sustained through rigid testing programs must depend largely upon outside sources for the animals necessary to maintain commercially active enterprises. The owners of such herds are extremely vulnerable from at least two directions. First, they face the danger of introducing infection through newly purchased stock. Secondly, the introduction of known healthy animals from herds that have been free of the disease for several years provides fertile ground for perpetuating any residual infection that might remain on the premises.

The susceptibility of such animals to brucellosis is usually quite high. In spite of a great deal of confusion and many false starts, approximately 33 million cattle were tested during the first five years of the program and the percentage of reactors was reduced from 11.5 in 1935 to 2.5 in 1940. During this period much was learned about the value of limitations of the test-and-slaughter method of eradication. It soon became evident, for example, that the results obtained by the elimination of reactor animals depend largely upon the stage of infection existing in a given herd at the time eradication efforts are undertaken. In cases where the disease has been introduced recently and is accompanied by frequent abortions, there is far less chance of immediate success than is possible with herds that have passed through these violent early stages of infection. Therefore, the most favorable time to eradicate brucellosis appears to be after clinical manifestations have subsided. This, of course, is impossible in program operations and adds to the problems of combating the disease by the elimination of reacting cattle.

Vaccination

Based upon the results of extensive laboratory and field investigations Strain 19 vaccine was approved in 1941 for use in the cooperative State-Federal brucellosis eradication program. Previous experiences with test and elimination of reactors already has emphasized the need for an immunological agent and the advent of Strain 19 was generally welcomed throughout the country. In fact, during the first few years after it became available, vaccination was employed more widely and indiscriminately than was justified. This was especially true with respect to its use in the vaccination of adult animals. The persistent vaccinal reactions resulting from over-age vaccinations have been a continuing source of confusion in herds where eradication measures, based upon the removal of reactors to the blood agglutination test, have been put into operation.

As might be expected, vaccination has been extremely popular in many sections of the country and each year since it became a part of the official program there has been a marked increase in its use. For the five-year period extending from 1941 through 1945, approximately two million calves were vaccinated officially. With vaccine available through commercial channels, there was probably at least an equal number of vaccinations performed outside the cooperative program during the same period.

As the use of vaccine increased, growing evidence was provided from the field that there were definite limitations to the protection afforded by vaccination with Strain 19. The immunity established through use of this product is relative and not absolute. This fact has been overlooked too often and explains some of the disastrous results that have been associated occasionally with vaccination. There is no question, of course, about the value of Strain 19 vaccine when it is used under conditions that assure maximum benefits. The importance of limiting exposures of vaccinated animals, through the adoption of approved animal husbandry and sanitary practices, has been proved in hundreds of cases.

Brucellosis Ring Testing

As a result of earlier studies carried out in Europe on the "ABR" test, cooperative investigations of this procedure were undertaken in the fall of 1947 at the University of Minnesota. Based upon consistently favorable reports covering the experimental use of the ring test, it was included, in 1952, as part of the procedures approved for use in the official brucellosis eradication program. Since its adoption, the ring test has proved extremely

valuable, especially in predominantly dairy areas of the country. Through its use, large numbers of dairy-type herds can be screened rapidly and economically for presumptive evidence of Brucella infection. This makes possible a concentration of eradication efforts on herds that are probably infected. Where moderate to low degrees of infection exist, counties can be ring tested at approximately 10 per cent of the cost of blood testing the same areas. Both milk and cream samples can be examined by this method. Because it is not effective for diagnosing individual animal infection, suspected herds must be routinely blood tested. Insofar as its efficiency is concerned, it has been found that the ring test locates around 90 per cent of the herds in which one or more Brucella-infected animals are in production. On the average, follow-up blood tests on ring-reacting herds are in agreement in 70 per cent of the cases. Approximately 70 per cent of failures to agree are due to the infected animals being out of production at the time ring tests are made. There seems to be a psychological aspect associated with milk and cream testing that encourages livestock owners to become actively interested in eradicating brucellosis from their herds. This, together with other factors relating to the usefulness of the test, has resulted in its rapidly increasing use since 1952.

Cull and Dry Cow Testing Program

In recent years studies have been conducted in the tracing of brucellosis reactor cattle found at slaughter to their herd of origin. A program has been inaugurated in which cull and dry cows from range and semi-range areas are identified with a distinctive back tag; as they leave the home ranch or as they enter a market. The tag by its code identified the State, county and herd of origin of the cull and dry cow moving to slaughter. At the packing plant a meat inspector collects a blood sample from this cow, identifies the sample with the numbered tag and forwards it to the local ADE brucellosis laboratory in the State in which the packing plant is located. The laboratory conducting the test forwards the report of the test result to the State of origin. If reactors are disclosed at slaughter, the herd of origin is tested. Negative animal tests are credited to the county of origin and are used in determining the incidence of brucellosis in the area. The cull and dry cow testing program gives the beef herds a practical screening test comparable to the use of the BRT in dairy herds.

Uniform Methods and Rules

Progress in the bovine brucellosis eradication efforts during the years before 1947 was handicapped by a lack of uniformity of operations in different parts of the country.

Instead of following a similar eradication pattern, the States insisted upon developing their own programs. Obviously, this lack of a uniform approach held little prospect for the eventual eradication of brucellosis. In order to correct this situation, the Bureau of Animal Industry took steps to encourage the establishment of uniform control and eradication practices. Sufficient interest was stimulated through discussions with interested groups throughout the country to result in the preparation and adoption of uniform bovine brucellosis eradication procedures at the December 1947 meeting of the United States Livestock Sanitary Association. With minor amendments added during subsequent years, this outline has continued to serve as an effective instrument in promoting the eradication project throughout the country. These recommendations are an integral part of the State-Federal memoranda of understanding relative to the cooperative brucellosis eradication project.

The design of these recommendations was predicated on the importance of providing reasonable flexibility for handling the brucellosis problem under varying herd conditions. Essentially they consist of three separate plans which may be reviewed briefly as follows:

Plan A--Test and slaughter, with or without calf vaccination

This plan has eradication as its immediate goal and is the method of choice where the incidence of infection is low and herds are self-contained. It has been highly successful in herds of this type when related recommendations have been closely followed. About seven out of ten infected herds can be freed of brucellosis by two tests. Three herds in ten require three or more tests to accomplish the same results. Difficulties with this procedure are most frequently encountered in highly susceptible herds where virulent infection is spreading rapidly.

Plan B--Test, calf vaccination, temporary retention of reactors

As the title indicates, this plan is designed to enable the owners of heavily infected herds to work out a difficult brucellosis situation in a gradual manner, thereby avoiding serious economic shock. It permits reactors to be held in quarantined herds for periods not to exceed three years. Under normal conditions, this provides time to raise enough resistant heifers on the premises to allow replacement of the adult infected animals. Plan B has been widely used throughout the country and for the most part has worked effectively as a stepping stone towards Plan A and eventual eradication.

Plan C--Calf vaccination without test of any part of the herd

This procedure is encouraged in those few areas of the country

where the incidence of brucellosis is high, and it would be economically infeasible to conduct a testing program with elimination of the reactor animals. Several years of high volume calf vaccination should prepare an area for an eradication program.

B. Brucellosis Eradication Procedures for Swine and Goats

At the present time no nationwide program has been inaugurated for the eradication of brucellosis from swine and goats. Due to the public health hazard and the economic effects on the industry by swine brucellosis, an appreciable amount of data on the disease has been assembled during the past few years. Based on this information, plans are being made to begin a small scale swine brucellosis eradication project in an area where swine brucellosis is a serious problem. The results of field trials, based upon testing and segregation of weanling pigs, have been encouraging and suggest the possibility that practical methods for economically eliminating *Brucella suis* infection from swine are now available. Although the blood-serum agglutination test does not possess the same accuracy in swine as in cattle, it has proved effective for diagnosing herd infections.

As already pointed out, *Brucella melitensis* infection in goats does not occur extensively in the United States and consequently, no concerted effort has been made to eradicate the disease. However, from the results obtained by the removal of reactors to the blood-serum agglutination test in individual herds throughout the country, it seems reasonable to believe that this procedure can be effectively employed as an eradication tool. It has been found that goats reacting in titres as low as 1:25 must be considered if test and elimination of reactors is to be successful in known-infected herds.

Bovine Brucellosis Eradication Progress

During the first 15 years of the cooperative eradication program, progress was erratic, even though the overall picture continued to show general improvement. For many years the project was hindered by lack of unified effort. However, great improvement was noted following the adoption of uniform control and eradication practices. Further difficulties arose during World War II as the result of acute shortage of trained veterinary personnel available for field operations. From July 1934, to March 31, 1960, a total of over 17 million herds representing approximately 214 million cattle, were tested for brucellosis. Over the same period, the indicated animal infection dropped from 11.5 per cent to 1.15 per cent. As mentioned before, the eradication picture has changed rather markedly at various times, concurrently with alterations in the level of field activities. During the first seven years of the program, when yearly testing volumes remained high, there was a decline each year in the percentage of reactors disclosed. With personnel problems developing in 1942, testing

began to drop off and the percentage of reactors started to rise, reaching a secondary peak of 5 per cent in 1947. From this point on, there has been a consistent reduction in animal infection rates.

Over the past few years, greatly increased interest in brucellosis eradication has been displayed by various groups, including the livestock industry, the veterinary profession, livestock sanitary officials, and the general public.

This interest has been reflected in the volume of official work performed. For the 9-month period ending March 31, 1955, more than 12 million cattle were tested for brucellosis. This compares favorably with the number tested during the same period in fiscal year 1956. In recent years there has been a decrease in the number of animals blood tested due to the increased use of the BRT as a screening device. Herds showing a negative BRT need not be bled. For the 17-year period (1941-57) a total of 36 million calves were officially vaccinated with Strain 19. Since its approval in 1941, the use of Strain 19 has increased each year, reaching an all-time high of 5.5 million calves vaccinated in 1957.

While it is impossible to accurately assess the value derived from vaccination over the past several years, there is reason to believe it has played an important role in the eradication project. As programs based upon test and elimination of reactors move into areas where widespread vaccination has been conducted, the incidence of infection disclosed has been surprisingly low in many instances. Moreover, it has been encouraging to note a gradually changing attitude on the part of livestock owners with respect to the role calf vaccination should play in the eradication plan. Rather than accepting this procedure as a means of control alone, there is increasing interest in utilizing vaccination as a move toward eventual eradication. In many sections of the country where vaccine has been extensively used, we are seeing a significant up-swing in the volume of blood testing. There is no question about the advantages of vaccination when it is employed as an adjunct to test and elimination of reactors. So long as any infection exists in the country there will be a continuing need for vaccination.

So far, 24 States, Puerto Rico and the Virgin Islands have qualified as Modified-Certified Brucellosis Areas. This designation certifies that the herd and animal infection disclosed in these States by testing does not exceed 5 and 1 per cent respectively. A number of other States are rapidly approaching this same status and should be eligible for certification within the near future.

Owing to extensive movements of livestock, the maintenance of certified areas has constituted a rather serious problem. Previous experience

with recertification at three-year intervals has shown that a significant increase of infection may be found in many such areas over this period of time. With the advent of the milk and cream ring test, this difficulty has been largely overcome in dairy sections of the country. By conducting semi-annual ring tests at milk and cream collection stations, it is possible to detect most centers of infection early enough to limit spread of the disease. From the standpoint of its economy of operation and its ability to detect brucellosis on a herd-infection basis, the ring test has fulfilled most earlier expectations. This test offers a means of employing qualified lay technicians for the collecting of milk and cream samples, thereby permitting the concentration of veterinary services on herds presumed to be infected. Since it became a part of the official program in 1952, approximately 11 million herd tests have been made representing an estimated 202 million cattle.

Extension of the use of the cull and dry cow testing program to additional States provides for the early detection of foci of infection in range areas. As of February 29, 1960, only seven months after its inauguration into the national program, 80,417 cull and dry cows from 12 States had been blood tested.

In 1959, provision was made for the establishment of Certified Brucellosis-free areas. The details of the standards for qualification of areas as Brucellosis-free have now been approved and it is expected that some States and numerous counties will qualify as Brucellosis-free areas in the near future.

Brucellosis Test Data on Swine and Goats

The increasing recognition that must be given to interspecies transmission of Brucella types has made it essential that consideration be given to all susceptible livestock groups. With this in mind, we have been tabulating results obtained from tests made on swine and goats in the various States. To date, these records have been collected over a period of more than five years and represent a total of 486,989 swine and 315,447 goats tested for brucellosis. Of the swine tested, 5.9 per cent were classed either as reactors or suspects. In the case of goats, 1.8 per cent were similarly identified. All States have been surveyed with respect to the swine brucellosis problem. In brief, the following information was obtained:

1. Twenty-eight (28) States now have provisions for certifying swine herds as brucellosis free. In several additional States increasing interest is evident in establishing a swine brucellosis program.
2. As of December 1959, there were 528 qualified brucellosis free swine herds in 21 States.

With no organized program available for the eradication of brucellosis from these species, the number of tests being conducted at owners' requests continues to be surprisingly high. And the results of this study reflects growing concern about the brucellosis situation on the part of many swine and goat raisers.

Expansion of the Bovine Brucellosis Eradication Program

The Congress of the United States made available additional funds for use in accelerating the brucellosis eradication project during fiscal years 1955-1958. This action could not have been taken at a more appropriate time as interest in eradicating the disease had never been greater. As might be expected, immediate expansion of these operations was greatest in the States where local programs were best organized. However, it has been possible to accelerate the program in most sections of the country far more rapidly than expected. The fact that the expanded program called for the restoration of former maximum indemnity payments of \$25 for grade animals and \$50 for pure-breds to owners of cattle destroyed because of brucellosis has been an important factor in this regard. Furthermore, under present operating procedures, States with cooperative agreements are no longer required to match Federal indemnity payments. Fortunately for the expanded program, two years of research was completed in time to throw new light on the interpretation of reactions in officially calf-vaccinated animals. These studies, conducted in field-vaccinated herds in different parts of the country, were designed to correlate blood-serum agglutination titres in official vaccinates and non-vaccinates with results of bacteriological examinations.

Briefly, these investigations showed that, in the case of calf-vaccinated cattle, the diagnostic level used for interpreting blood-serum agglutination reactions could be safely raised one full dilution over that employed for routine diagnosis of brucellosis in unvaccinated animals.

Thus, with the alternate interpretation, officially calf-vaccinated animals are not considered infected unless they react to the agglutination test in titres of 1:200 or higher. This compares with reactions in the 1:100 or higher dilutions that are still considered diagnostically positively for non-vaccinates. The new interpretation for vaccinates has been accepted and incorporated into the official recommendations for bovine brucellosis eradication procedures.

At the inception of the expanded program, it was realized that the personnel requirements for the various States would have to be met through the employment of practicing veterinarians. This being the case, a system was developed to pay cooperating veterinarians on

a per-header per-herd-and-per-head basis, on schedules approved by the Agricultural Research Service and the individual States. Participation of the veterinary profession in the new program has been reasonably good. Approximately 7,000 are now signed up for service and many are actively engaged in various aspects of the program.

Discussion

1. The momentum generated in program operations during the past two years is a valuable asset that can be used to advantage. Experience has shown that ground may be rapidly lost when pressures are relaxed. On the other hand, an expanding program tends to attract even wider participation.
2. There are five important factors with which the success or failure of the brucellosis eradication campaign is intimately related. These are (a) attitude of the livestock industry, (b) available funds, (c) manpower, (d) necessity for complete area work, and (e) danger of complacency in certified areas.
 - a. There are still sections of the country where more effort needs to be made along information lines. Whenever the industry is fully informed about the program, its support is always forth-coming.
 - b. There appears to be a growing realization that the more support everyone provides, the sooner brucellosis and its associated losses will be eliminated. This trend needs to be encouraged in every way possible.
 - c. Although the participation of nearly 7,000 practicing veterinarians has contributed materially to the eradication effort, there are still areas in which service requirements of the program are not being met. This is especially true in those sections of the country where few, if any veterinarians are located. It also occurs to a lesser extent in certain other areas as a result of practitioners being slow to carry out their assigned responsibilities.
 - d. We have reached the time when all brucellosis eradication work should be conducted on a complete area basis. Without the protection afforded by this type of operation, progress is delayed and difficult to maintain. Every encouragement possible needs to be given complete area work.
 - e. Complacency in certified areas is to be avoided at all costs. There is danger that efforts will be relaxed in qualified counties and States to the extent that infection rates are allowed to increase. The ultimate goal of complete eradication must be emphasized continuously.

3. The accelerated brucellosis eradication program has demonstrated conclusively the effectiveness of available tools and procedures when aggressively and properly applied. There is no question about our ability to achieve nationwide certification within the near future and eventual complete eradication of this disease if we so desire.

AUTHORITIES, RESPONSIBILITY AND FUNCTIONS OF COOPERATIVE DISEASE ERADICATION (TUBERCULOSIS)

The Tuberculosis Eradication Staff is responsible for the development of effective cooperative programs of inspection, quarantine, testing, diagnosis, condemnation, disposal, and sanitary procedures designed to control and eradicate tuberculosis and paratuberculosis in cattle and tuberculosis in poultry. This is accomplished in the 50 States and Puerto Rico by the development of recommended policies, plans, regulations, and procedures.

The authority for this Cooperative Disease Eradication Program was first promulgated by the Acts of Congress of 1834. The Federal Act provided for cooperation with the various States and Territories in order to effect the suppression and extirpation of communicable diseases of livestock.

The Act of 1903 extended the authority of the Secretary of Agriculture to prevent the introduction or dissemination of any communicable disease in the U. S. by providing specifically for Federal inspection of livestock and the issuance of certificates for interstate movement.

The Act of 1905 empowered the Secretary of Agriculture to establish a Federal quarantine to prevent the spread of communicable livestock diseases from one State to another. It was also intended to assist the States in controlling the spread of animal diseases from certain areas.

Under Section 114a, Title 21, U. S. Code, the Secretary of Agriculture, either independently or in cooperation with States or political subdivisions thereof, farmers' associations and similar organizations, and individuals, is authorized to control and eradicate tuberculosis and paratuberculosis of animals, avian tuberculosis, brucellosis of domestic animals, southern cattle ticks, hog cholera and related swine diseases, scabies in sheep and cattle, dourine in horses, scrapie and blue tongue in sheep, incipient or potentially serious minor outbreaks of diseases of animals, and contagious or infectious diseases of animals (such as foot-and-mouth disease, rinderpest, and contagious pleuropneumonia) which in the opinion of the Secretary constitute an emergency and threaten the livestock industry of the country, including the purchase and destruction of diseased or exposed animals (including poultry) or the destruction of such animals and the payment of indemnities therefore, in accordance with such regulations as the Secretary may prescribe. As used in this section, the term "State" includes the District of Columbia and the Territories and possessions of the United States.

The Secretary may enter into a cooperative agreement with a State or States when he determines that a particular disease should be eradicated. The agreement may include the purchase and disposal of diseased or exposed animals. The term under which cooperative programs operate are included in a document known as a "Memorandum of Understanding" which outlines the respective duties and responsibility of the Federal and the State Agencies. The agreement endorses the use of uniform methods and rules and the enforcement of State laws and regulations. For many years, in the interest of uniformity, procedures for livestock disease control have been agreed upon at annual meetings of the U. S. Livestock Sanitary Association, where all States are represented. State officials are generally willing to use these recommendations as a guide with regard to tuberculosis and brucellosis eradication. The Division usually approves recommendations made by the U. S. Livestock Sanitary Association with the exception of minor changes.

In the case of bovine tuberculosis, there has been a series of what is known as "Uniform Methods and Rules for the Establishment and Maintenance of Tuberculosis-free Accredited Herds of Cattle and Modified Accredited Areas".

These procedures have been agreed upon by representatives of most of the States, as referred to above, at the annual meetings of the U. S. Livestock Sanitary Association and have been approved by the Division. There is no legal authority in these uniform methods and rules; however, in most States laws have been enacted which authorize livestock sanitary officials to proceed on the basis of the requirements that are stipulated in these.

As we proceed under cooperative programs we should be cognizant of our legal authority. Basically, the State officials operate under the laws of their State concerning the diagnosis of disease and quarantine and control of infected or exposed animals within the State while Federal officials are responsible for enforcement of laws to control or prevent the spread of animal diseases beyond State boundaries.

The cooperative programs are designed to provide for the interchange of information and planning that will benefit the livestock industry on both the local and national level. Thus Federal officials are commonly authorized by the State to operate under State laws and regulations in conjunction with their duties as Federal employees.

The actual operation of cooperative programs vary somewhat in different States. In some instances the State officials may be more active and assume greater responsibility for a certain

program or phase of a program, while the Federal officials devote more time and attention to some other program. In most States it is arranged so that both State and Federal employees give approximately equal attention to administering the cooperative programs within the State. In such instances, Federal veterinarians are essentially carrying out State and Federal requirements in their particular area. In one State the local regulations must be enforced by State Civil Service employees only. In many States, however, Federal employees are properly deputized to act for the State.

Close collaboration is maintained with State officials to coordinate the practices and policies on a national basis that will also prove effective within the States. Constant effort is made to improve the effectiveness of operations by maintaining liaison with research workers in the Federal Government and in private and public agencies. There is maintained an interchange of information among this Staff, the U. S. Livestock Sanitary Association, the AVMA, and the Public Health Service so that the best interest of the general public will be served. Interchange of information with other countries is maintained, and counsel and technical assistance is provided in the interest of improved tuberculosis eradication programs.

Educational campaigns are conducted to demonstrate the value of tuberculosis eradication in relation to the public health and the livestock industry in general. Factual information is made available to the public through the preparation of bulletins and other printed matter. Technical information and data on tuberculosis eradication are furnished for publication in current papers and magazines. Two national conferences on tuberculosis eradication, as well as numerous smaller conferences and work shops within several States, have done much to motivate all personnel engaged in the work toward further progress in our goal of eradication.

Finally, careful consideration is given to established guide lines and results achieved with a view to providing more efficient and effective results. Our goal is complete eradication of tuberculosis.

SCREWWORM ERADICATION PROGRAM

Federal and State funds were appropriated during 1957 to begin a screwworm eradication program in the Southeastern United States, a cooperative Federal-State effort.

The idea of eliminating screwworms, the larvae or maggots of Callitroga hominivorax, by overwhelming the native population through release of laboratory reared sterile male flies had been conceived and proved in field trials by research entomologists of ARS. The economic need for eliminating screwworms was well established by survey findings that indicated livestockmen were losing \$20 million dollars annually in the Southeastern United States, 10 million dollars in Florida alone, from ravages of the pest.

The winter of 1959-58 was one of the coldest on record in Florida, eliminating screwworms throughout the Southeast except for the southern portion of the Florida peninsula. The availability of funds coupled with this remarkable natural advantage called for prompt action on the part of the program directors of the Animal Disease Eradication Division and the States involved.

Small scale rearing facilities previously established at Bithlo-Orlando, Florida, to furnish sterile flies for an earlier field trial were rapidly pushed to maximum production, furnishing sufficient numbers of flies for aerial release in a band across the peninsula north of the overwintering line. The plan, which proved successful, was to prevent northward migration of the insect in great numbers with the coming of warmer weather.

Meanwhile, an airplane hangar at Sebring, Florida, was converted into a highly mechanized mass rearing unit with fly production capabilities well above 50 million sterile flies per week, the estimated number needed to accomplish eradication. By July, 1958, the facility was in full production providing, each week, 50 million screwworm flies made sterile by exposure to radioactive rays from a cobalt-60 source. These flies were systematically released from small planes according to pre-determined flight plans over approximately 85,000 square miles in Florida and parts of Alabama and Georgia.

A large field force of veterinarians, entomologists and livestock inspectors conducted extensive ground surveys in the release areas through livestock inspections, fly trapping, and education work to provide essential information on effectiveness of the released sterile flies.

To protect the free areas from reinfestation through introduction of infested livestock, two inspection lines were established early in the program. One of these lines extending from the Atlantic Ocean to the Gulf of Mexico across the central part of Florida was maintained to prevent the movement of infested animals from southern Florida into screwworm-free areas to the north. This line was abolished near the end of 1959 coincidentally with the termination of sterile fly releases. The other inspection line was established along the eastern boundaries of Arkansas and Louisiana extending from Memphis, Tennessee, to the Gulf of Mexico. Thirteen Federal inspection stations were established and continue to be maintained to inspect and treat all livestock being transported from the screwworm infested Southwest into or through the southeastern eradication area. Federal Regulations also provide for the inspection of livestock moving into the eradication area from the north during warm weather.

During the summer of 1959 the apparent absence of screwworms in Florida prompted program officials to test the effectiveness of the eradication effort by discontinuing the release of sterile flies over a large portion of previously screwworm infested southern Florida. Livestock inspections by owners and an increased number of livestock inspectors in the area were intensified.

Since no infestations were observed in the test area during a three-month period, program officials decided to gradually discontinue the rearing and release of sterile flies in the remainder of the Southeast.

In November 1959, the production of sterile flies was discontinued in an orderly manner. The rearing facility was placed on a stand-by basis with the capability of being quickly reactivated if such action becomes necessary. An insurance colony of flies is being maintained at a Department laboratory in Texas.

Systematic animal inspections for evidence of screwworm infestations and the trapping and identification of flies in the areas formerly infested are being continued to provide early detection of screwworm larvae should they appear.

A survey conducted during 1959 in the southwestern United States and northeastern Mexico failed to reveal a natural barrier comparable to the water barrier that partly surrounds the screwworm overwintering area in Florida. An eradication program would not be feasible without a perpetual program to prevent reinfestation of the Southwest through the migration of screwworm flies northward from Mexico. The factors involved indicate that any joint program by the United States and Mexico should be directed toward research and field trial on sterile male and other techniques that might be used to eradicate or control screwworms.

THE GENERAL RESPONSIBILITIES OF THE SPECIAL DISEASES
ERADICATION ARE AS FOLLOWS:

1. PLANNING. Participates in the planning and development of disease control and eradication and allied programs of the Division.
2. PROGRAM DEVELOPMENT. Develops and recommends cooperative programs of inspection, quarantine, testing, diagnosis, disinfection, condemnation and disposal designed to control and eradicate dourine, glanders, cattle-fever ticks, scabies, bluetongue, scrapie, and other livestock diseases not assigned to other Staff Officers of the Division.
3. ANIMAL AND POULTRY DISEASE INFORMATION. Collects and correlates animal and poultry disease morbidity and mortality information available to the Agricultural Research Service, including that available through other Federal and State agencies. Disseminates such information in systematic reports designed to be of maximum assistance to livestock and related industries, practicing veterinarians, and Federal and State agencies concerned with the prevention, treatment, control, or eradication of animal and poultry diseases.
4. AUTHORITIES AND PROCEDURES. Develops and recommends policies, plans, regulations and procedures required for the administration of assigned functions and responsibilities.
5. COOPERATIVE AGREEMENTS. Originates and reviews proposals relating to and develops and recommends the undertaking or modification of co-operative agreements and similar authorizations providing for Federal-State cooperation in the conduct of special diseases control and eradication and animal quarantine measures.
6. TECHNICAL ASSISTANCE. Provides technical advice and assistance to officials of the various States in the planning and development of requirements and measures best suited to the conduct of assigned co-operative disease control and eradication programs in their respective States.
7. REGULATORY MEASURES: Collaborates with representatives of the various States in formulating regulations and procedures for controlling the movement of livestock to prevent the spread of dourine, glanders, cattle-fever ticks, scabies, bluetongue, scrapie, and miscellaneous other livestock diseases.
8. LIAISON. Maintains liaison with other Federal and State agencies and public and private organizations and associations on matters relating to its assigned functions.
9. FIELD COORDINATION AND DIRECTION. Develops procedures for exercising technical direction over and coordinating field activities.

SPECIFIC RESPONSIBILITIES OF SPECIAL DISEASES ERADICATION

SCRAPIE ERADICATION

NATURE OF DISEASE

Scrapie is a chronic infectious disease of sheep and goats characterized by an unusually long period of incubation, up to three years or more. Symptoms include intense pruritus (the itching and rubbing causing wool to be scraped off), progressive locomotor incoordination, weakness, and death.

Tentative clinical diagnosis of scrapie is confirmed by histopathological studies of brain tissues. Brain tissue from the diseased animal is examined for the presence of vacuoles within the nerve cells. The suspicious animal should not be slaughtered until the case is advanced sufficiently so that a satisfactory specimen can be obtained for laboratory examination. Brain tissue for histologic studies should be placed in 10 percent formalin and should not be frozen. The disease should be differentiated from listeriosis, Aujeszky's disease, rabies, pregnancy toxemia, and scabies.

Scrapie is believed to be caused by a filterable agent of unusual properties. Like some viruses, the agent survives for an extended period (at least two years) when held at temperatures far below zero. It differs from ordinary viruses in that it can survive hours of boiling and is resistant to disinfectants that destroy them.

British workers have injected material from sheep infected with scrapie into other sheep and have transmitted the disease through 16 serial passages. They have also transmitted the disease from sheep to goats and back to sheep, and from artificially infected goats to other goats. French workers have also transmitted scrapie to sheep and to goats by injecting brain and spinal cord tissue from scrapie-infected sheep, and in both countries experimental evidence has indicated that the disease can be spread by contact.

Efforts to develop a diagnostic test or a vaccine have not been successful and no effective treatment has been found.

ECONOMIC IMPORTANCE

Sheep showing symptoms of scrapie invariably die. In this country the disease has been more prevalent in valuable breeding animals of imported stock. Due to the extensive interstate commerce in such animals and the rapid manner in which they are distributed over large areas, the problem is serious. Since the disease seldom affects sheep under 18 months of age, it would be expected to be a less serious problem among commercial lambs (except for those born weak or orphaned because their dams were affected by the disease).

The purebred sheep industry suffers very serious loss when valuable bloodlines are destroyed and because quarantine restrictions must be placed on its flocks. It has been quite difficult to estimate the morbidity of scrapie even in countries where the disease is common. There owners tend to be secretive and may deny that their flocks are affected with the disease. It is particularly urgent that every effort be made to eradicate scrapie before losses pyramid here as they have in countries where the disease has been widely disseminated.

HISTORY

Although scrapie has been known in Europe for over 200 years, it was not until 1947 that the disease was diagnosed in this country--the first cases being reported in Michigan in a flock that consisted largely of imported sheep or their progeny. Scrapie had been reported previously in Canada in 1939, in Suffolk sheep imported from Scotland. Sheep of the Cheviot, Southdown and Hampshire breeds have been found to be infected in Canada. In the United States scrapie has been diagnosed in Suffolk sheep and in Cheviot sheep. Other countries in which scrapie has been reported include France, Germany, Poland, Austria, Hungary, England, Iceland, Norway, Poland (Prussia) Scotland, Spain, Wales, Australia, and New Zealand. Australia and New Zealand acquired the disease through the importation of Suffolk sheep and from Great Britain. Both countries believe they have eradicated scrapie by following a slaughter program. They have also--as has Canada--prohibited further importation of British sheep in order to prevent the reintroduction of the disease.

In the United States scrapie has been diagnosed in a total of 87 flocks in 72 counties in 23 States. These include Texas, Georgia, Iowa, Missouri, Michigan, West Virginia, Kentucky, Wyoming, Mississippi, Maryland, Virginia, Wisconsin, Utah, New York, Oregon, Tennessee, North Carolina, Connecticut, Alabama, Illinois, California, Ohio, and Indiana. Three of the 87 flocks have been of the Cheviot breed, the remainder have been Suffolks. No breeds of sheep are considered to be immune to scrapie. In France (where British breeds are not common) the disease is not confined to any particular breeds.

CURRENT ERADICATION PROGRAM

The present State-Federal cooperative program, which provides for inspection, diagnosis and quarantine, and for slaughter of infected and exposed sheep and goats, was developed through review of information from Europe, consultation with European and Canadian officials, and through meetings with members of the sheep industry of this country, research workers, and livestock sanitary officials.

The eradication program places emphasis on infected flocks, which are slaughtered in their entirety. Exposed sheep moved from the infected flock (and their immediate progeny) are slaughtered also. The flocks in which these animals are, or have been, located are inspected for a period of 42 months following removal of the exposed animals. Sheep in and from flocks which have been determined to be the source of infection are handled in the same manner as those of infected flocks.

The Federal Government may indemnify owners for animals destroyed because of scrapie a maximum of \$25 each for grade animals and \$75 each for purebred animals. This amount is based on 50 percent of the difference between appraisal and salvage and may be paid whether or not the State also pays indemnity.

Scrapie is a particularly difficult disease to handle. Its onset is insidious. The early symptoms are difficult to detect and the affected animal may actually appear to have recovered, only later (perhaps after several months) to begin to show the more obvious symptoms. Early symptoms include nervousness, apprehension and increased excitability; the head and ears may be carried in unnatural positions, and there may be a loss in condition in spite of a good appetite. As the disease progresses the animal rubs against fixed objects and may nibble at itself and pull wool. When the affected animal rubs or is being rubbed, the scratch reflex, characterized by extension of the head accompanied by nibbling movements of the lips and vigorous wagging of the tail, usually is evident. Later symptoms include debility, incoordination and finally death.

There is no denying that scrapie appears more frequently in certain breeds and in certain bloodlines within these breeds. However, this is difficult to evaluate since particular bloodlines have become very popular in recent years and breeders naturally seek those that are currently in demand.

It is apparent that scrapie is a disease that is spread by the movement of sheep from certain flocks that have become reservoirs of infection, rather than spreading readily to adjacent farms as do such diseases as contagious ecthyma and scabies. This is brought out by the fact that the 87 scrapie-infected flocks in this country have been found in 72 counties in 23 different States. One particular flock in Indiana, for example is believed to have been responsible for spreading the disease into 9 flocks in Indiana, 2 flocks in Alabama, 2 flocks in North Carolina, and 1 flock in Missouri. There would probably have been many more infected flocks if the Indiana flock concerned and the exposed sheep sold from it had not been slaughtered. Other reservoirs include another flock in Indiana, one in Oregon, and two flocks in Canada. Infected animals were never observed in the Oregon flock but, inasmuch as sheep from

this flock developed scrapie in 2 flocks in Oregon and 3 flocks in California, it was determined that this flock was disseminating the disease and, for this reason, it was treated as an infected flock and slaughtered.

RESEARCH

Research on scrapie is time consuming and costly. It requires time to span the long incubation period, large numbers of animals to get the required number of "takes," space in which to maintain and segregate flocks used in experimentation, and personnel to care for such animals and to do the necessary technical work. Research is not being carried on in France at this time, but the subject is very much alive in Canada and in Great Britain. No research projects are under way in the United States; however, we have sent an American Veterinarian to do cooperative research work with the British. He has now been doing cooperative scrapie research work in England for two years.

VISUAL AIDS

- A. Film, "Scrapie, an Obscure Disease of Sheep."
- B. Slides, "Vaculation of neurons of sheep affected with scrapie."

REFERENCES

- A. Article on scrapie in the Report of Committee of the United States Livestock Sanitary Association, 1954, "Foreign Animal Diseases."
- B. ADE Handbook, "A Study of the Epizootiology of Scrapie in the United States." May 15, 1956.
- C. ADE Branch Notice dated September 20, 1955, "Information secured from Europe concerning scrapie."
- D. ADE Division Notice dated March 18, 1957, "Additional Information secured from France concerning Scrapie."
- E. ARS Special Report "SCRAPIE" published in October 1957.
- F. Current "Animal Morbidity Reports."
- G. 9 CFR, Part 79--Scrapie in Sheep.
- H. 9 CFR, Part 54--Animals Destroyed Because of Scrapie.
- I. ADE Division Notice dated May 1, 1959, "Additional Information Relating to the Epidemiology of Scrapie in the United States".

DOURINE ERADICATION

NATURE OF DISEASE

Dourine is a usually chronic, communicable disease of horses and asses caused by Trypanosoma equiperdum, a protozoan of microscopic size. The disease is characterized first by a local inflammation of the external genital organs, and later by a cutaneous eruption and symptoms of nerve paralysis.

None of the symptoms described is pathognomonic for dourine when taken individually, but collectively they are quite helpful in reaching a diagnosis.

Dourine was first diagnosed by means of history and clinical symptoms, later augmented by microscopic demonstration of the trypanosome, morphological examination of the blood, agglutination, precipitation reaction, fixation of lipoids, agglomeration, allergic methods, and by experimental inoculation.

In 1912 the complement-fixation test was made applicable to the diagnosis of dourine and has been the method of choice for many years in the United States and in other countries. This test gives a specific group reaction for the genus Trypanosoma.

In tropical regions differential diagnosis of dourine from nagana, surra, and mal de caderas may be difficult. In regions where these diseases do not exist, the initial stage of dourine may be mistaken for traumatic inflammation of the genitals, for injury during coitus, for cases of glanders and purpura hemorrhagica when these diseases involve swelling of the lower abdomen, and from lumbar, facial, or other types of paralysis not of dourine origin.

ECONOMIC IMPORTANCE

A mortality of 50 to 70 percent has been reported in animals affected. Losses, aside from mortality, include loss of flesh, interference with breeding and herd management programs, and difficulty with the movement of equines due to the necessary quarantine restrictions.

HISTORY

Dourine was first described by Ammon from his experience in Prussia in 1796-1799. The nature of the etiological factor was indicated by Rouget in 1894. Until the middle of the last century dourine was widely distributed throughout Europe. More recently it has been indigenous only in certain southern and eastern countries of Europe, but is more common in other continents. The disease has appeared in North and South Africa, Asia, Asia Minor, Syria, India, Java, Australia, South America, and North America. The spread of dourine has been enhanced by the extensive movement of equines such as takes place during time of war, etc.

In Canada, dourine appeared in 1904 and was eradicated in 1920. In Mexico, dourine is widely spread, and along the Mexico-United States border has been and continues to be a very serious threat to susceptible animals in this country.

In the United States, dourine was first recognized in Illinois in 1886, after being introduced by an imported French stallion. The disease was brought under control after being detected at irregular intervals in Nebraska and South Dakota. In 1906 a new center of infection developed in Iowa and was not curbed until 1911.

By means of the complement-fixation test positive dourine reactors have been found over a large area including Arizona, California, Colorado, Idaho, Iowa, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Virginia, and Wyoming.

Dourine has been eradicated from this country; however, reactors are found from time to time in areas bordering the Republic of Mexico--particularly among horses on Indian reservations in those areas.

CURRENT PROGRAM

State-Federal cooperative eradication includes inspection, collection of blood samples, testing of such samples with the complement-fixation test, and destruction of all animals positive to the test. An occasional animal may apparently recover, but it remains a potential spreader. Spaying reactor mares and castrating reactor stallions is only a temporizing method of control.

When dourine is suspected the proper officials should be notified immediately. Veterinarians should be prepared to obtain blood samples from suspicious equines so that serum samples can be sent to the laboratory for testing by the complement-fixation test.

REFERENCES

- A. Farmer's Bulletin No. 1146, "Dourine of Horses."
- B. Current "Animal Morbidity Reports."
- C. 9 CFR, Part 75--Dourine in Horses and Asses.

SCABIES ERADICATION

NATURE OF DISEASE

Scabies is a contagious skin disease of animals caused by minute, parasitic mites, hardly visible to the unaided eye, living on or in the skin. It spreads very rapidly, is characterized by inflammation,

exudation and thickening of the skin, and results in intense itching, loss of wool or hair, and emaciation. Most domestic animals are susceptible. Of principal interest to agriculture are sheep and cattle.

Scabies is not difficult to diagnose--one has only to demonstrate and identify the causative mite. Veterinarians and inspectors should be prepared to take skin scrapings in case a suspicious skin condition is encountered and should have a hand lens available for studying external parasites. Recognizing the disease is more difficult in recently infected animals and during periods when the mites are less active, particularly during ward weather. Mites should be mounted for future reference and specimens sent to the ADE Diagnostic Laboratory for confirmation or when the animals have been treated for other external parasites in such a way that all scabies mites were not killed.

Scabies usually follows a customary pattern of spread. It is comparatively easy to eradicate with the dips available to us, providing all animals in infected and exposed herds and flocks are properly dipped.

Scabies is spread through changes of ownership which result in the introduction of infected animals into herds or flocks; through market centers, sales rings, livestock shows, stockyards, etc., and is kept in existence by undetected reservoirs of infection.

ECONOMIC IMPORTANCE

Cattle and sheep cannot be raised profitably when affected by scabies. Great monetary losses are suffered in decreased meat and wool production, arrested development of young animals, poor physical condition of affected animals predisposing them to other diseases, and damage to hides. Quarantine restrictions increase the cost of shipping and add to the losses suffered by the industry. Unless properly treated, affected animals may die. The disease in the past has caused tremendous losses in this country.

HISTORY

Scabies has been known from the earliest times and is mentioned in Arabian medicine and in the Old Testament.

Psoroptic scabies has probably been a problem in the United States since the first sheep and cattle were introduced into this country, and has been very wide spread from time to time. Efforts to eradicate the disease were begun more than 50 years ago.

At the turn of this century Federal quarantines were placed upon the western half of the United States. An active eradication program was developed and gradual progress was made in the western range areas. The Federal quarantine was removed from counties and States as the disease was eradicated.

However, reinfestation of sheep and cattle in range areas was not uncommon and it was not until some 20 years ago that the eradication program in the West neared completion. As the disease became less common in these areas more attention was directed toward its eradication in the Midwest and East.

The Psoroptic Sheep Scabies Eradication Program was implemented a few years ago in Louisiana and in Mississippi, particularly in certain parishes and counties that had been under Federal quarantine since 1918 and 1927. This all-out drive has been quite successful and has eliminated one of the important reservoirs of infection. The Federal quarantines in both Louisiana and Mississippi was lifted July 8, 1957.

Unfortunately the general outlook in other States, particularly those of the midwestern farm areas, is not nearly so good. The disease has probably been present in the majority of the problem States almost continuously since before 1900. Active eradication programs have been followed from time to time in a number of those States but, for the most part, have afforded only temporary relief.

A comparison of the calendar year report for 1959 (841 flocks) with that for 1958 (748 flocks) indicates there was an increase of 12.4 percent in the number of infected flocks reported. The report of 736 infected flocks in 276 different counties during fiscal year 1959 (an average of approximately 2.6 infected flocks per county) suggests that the disease is wide spread in certain States. Psoroptic sheep scabies was diagnosed by ADE Division inspectors in 209 consignments of sheep received at public stockyards during fiscal year 1959.

Following the eradication of psoroptic cattle scabies from the western range areas the disease has been only infrequently seen. The first major outbreak in recent years was reported in the winter of 1953-1954. A number of infected herds were found in southeastern Colorado. From there the disease spread to Arizona, California, Oklahoma, Texas, and Missouri. The disease also was reported in Wisconsin.

During the following winter psoroptic scabies was found at the Chicago Union Stock Yards in Colorado cattle. Infected herds also were found in Colorado, Kansas, Texas, Nebraska, and Kentucky. During fiscal year 1956 infected herds were again found in Colorado, as well

as in Kansas, Texas, New Mexico and Iowa. During fiscal year 1957 infected animals were found in Colorado, Wyoming and Ohio, and in cattle from Kansas at the Chicago Union Stockyards, and at the St. Joseph Stock Yards, and at Denver, Colorado, in a bull from Iowa. During fiscal year 1958 the disease was found in two herds in Colorado and in one herd each in Kansas and Iowa and during fiscal year 1959 the disease was found in 5 Illinois herds, 4 Iowa herds, 3 Nebraska herds, an auction market in Colorado and in 12 herds in Kansas and 2 in Texas. During fiscal year 1960 cattle scabies was reported in one herd each in Colorado, Iowa, and Oregon.

CURRENT PROGRAM

The State-Federal cooperative program provides for inspection of sheep and cattle for scabies and for treatment of infected and exposed animals. Quarantines are imposed as required.

Experience has shown that both Federal and State authority are needed for satisfactory control, whether the proposed movement of animals is intended to be interstate or intrastate. In some cases, State quarantines alone have been unable to control the spread of scabies. On the other hand, Federal authority is incomplete within the State.

Animals affected with scabies are diseased and are prohibited by Federal regulations and law from moving interstate. Each State also has regulations concerning the handling of infected animals and movements from affected herds and flocks.

Veterinarians and inspectors should be alert for the symptoms and lesions of the disease not only in suspicious herds and flocks but also on routine inspections at concentration points, prior to issuing health certificates, etc.

It is very important to determine the origin of infection and to locate animals moved from infected and exposed herds and flocks in order to treat all reservoirs of infection and thus carry out the goal of the Scabies Eradication Program, which is to completely eradicate the disease from the United States.

As an important aid in the training of personnel, on-the-spot training at "Scabies Schools" has been provided to more than 100 State and Federal employees.

VISUAL AIDS

- A. Film, "Psoroptic Sheep and Cattle Scabies."
- B. Kit of 45 scabies slides.

REFERENCES

- A. ADE Branch Notice dated October 12, 1955, "A Review of the History and Incidence of Sheep and Cattle Scabies in the United States."
- B. Current "Annual Report of Cooperative State-Federal Sheep and Cattle Scabies Eradication."
- C. Farmers' Bulletin No. 1085, "Hog Lice and Hog Mange."
- D. Farmers' Bulletin No. 1017, "Cattle Scab."
- E. Farmers' Bulletin No. 713, "Sheep Scab."
- F. Current "Animal Morbidity Reports."
- G. 9 CFR, Part 73--Scabies in Cattle, and Part 74--Scabies in Sheep.

BLUETONGUE

NATURE OF DISEASE

Bluetongue is an acute, infectious disease of sheep and, perhaps, to a much lesser degree, of cattle. It is characterized by a rise in temperature, lameness, hemorrhagic inflammation of the mucous membranes of the mouth, edematous swelling of the head parts, and a cyanotic discoloration of the tongue. The disease is caused by a filterable virus and spread by an insect vector.

A tentative diagnosis of bluetongue should be based on symptoms, lesions, history and spread. Bluetongue is a seasonal disease which usually appears rather suddenly in midsummer and fall, followed by a rather rapid buildup, and disappears when the frosts of winter cause the vector to become inactive. The disease does not spread in the absence of the vector. In warm climates the vector generally believed to be associated with outbreaks (Culicoides variipennis) may be active throughout the year and clinical cases of bluetongue may be seen the year round.

The inoculation of susceptible sheep with blood collected from animals in the early stages of the disease (preferably those with high temperatures) is the most satisfactory means of confirming a clinical diagnosis of bluetongue. At present there are no other dependable means of diagnosis; however, work is being done to develop other means of testing.

Bluetongue must be differentiated from certain stages of other diseases including photosensitization, contagious ecthyma, "stiff-lamb disease," pneumonia, Rift Valley fever, founder, and foot-and-mouth disease.

ECONOMIC IMPORTANCE

Bluetongue is becoming an increasingly serious problem in the United States. Morbidity in affected flocks varies widely--being anywhere from 2 to 50 percent--and may approach 100 percent. Many of the cases may be subclinical. The mortality is also quite variable--being between 1 and 30 percent of the diseased animals. In some flocks the mortality is much higher, and in Africa is often from 40 to 90 percent. Losses aside from mortality include loss of flesh and weight, damage to wool clip, and interference with reproduction, with flock management programs, and with the marketing and movement of animals.

HISTORY

Bluetongue was first reported in the Union of South Africa where it was identified as a filterable virus disease in 1905 and has occurred there and caused serious losses since the latter part of the 19th century. The disease has been studied extensively in the Union of South Africa, at Onderstepoort, and these studies have provided virtually all the fundamental information about it. Bluetongue has occurred in Southwest and East Africa, in Northern and Southern Rhodesia, as far north as French Sudan to the west and Abyssinia to the east, and has also been mentioned in reports from Cyprus, Israel, Turkey, Palestine, Syria, West Pakistan, Portugal, Spain, and Morocco.

The disease has probably been present in the United States for a number of years, but received first mention in Texas in 1948 under the name of "soremuzzle." Since then the clinical diagnosis of bluetongue in California, Arizona, Utah, Colorado, New Mexico, Texas, Oklahoma, Missouri, Idaho, Kansas, Nebraska, Nevada, and Oregon has been confirmed by virus isolations and cases of the disease in other States have been suspected.

CURRENT PROGRAM

The Department of Agriculture has cooperated with biological houses, State officials, sheep owners and others in the diagnosis of bluetongue and in the production, testing and field use of a vaccine for its prevention. The vaccine became available for field use in 1954. It has been widely used since that time.

When bluetongue is suspected the proper officials should be notified. Veterinarians should be prepared to collect blood samples from

suspect sheep and cattle for forwarding to the Animal Disease Research Laboratory in Denver, Colorado, for inoculation into test sheep.

Good nursing and symptomatic treatment is recommended. Since heat and sunlight aggravate the condition, infected animals should be kept cool and in the shade. Infected animals should not be handled roughly or driven, particularly on hot days.

Control procedures include vaccination against bluetongue in areas where the disease is endemic and protection against the insect vector.

VISUAL AIDS

- A. Film, "Bluetongue, Catarrhal Fever of Sheep."
- B. Kit of 25 bluetongue slides. ADE Branch Notice dated December 17, 1958, "Bluetongue Slides".
- C. ADE Division Notice dated September 11, 1959, "Bluetongue Slides obtained From Spain and Portugal" and accompanying slides.

REFERENCES

- A. Article on bluetongue in the Report of Committee of the United States Livestock Sanitary Association, 1954, "Foreign Animal Diseases."
- B. Current annual report of "The Incidence of Bluetongue as Reported in the United States."
- C. Current "Animal Morbidity Reports."
- D. "Losses in Newborn Lambs Associated with Bluetongue Vaccination of Pregnant Ewes" (Jour. A.V.M.A., Sept. 1955).

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ANIMAL MORBIDITY REPORTING

More than 35 years ago, the secretary of the United States Livestock Sanitary Association urged that national veterinary vital statistics be collected and distributed. The recommendation was based on the studied conclusion that such veterinary medical intelligence is essential in order to apply necessary disease control measures. The idea never lacked moral support, but for a long time it was without funds and central agency to accomplish the task.

Animal morbidity and mortality reporting is not in itself a preventive against the inroads of animal diseases, but it is one of the important foundation stones in a sound structure of animal disease prevention, control, and eradication. The U. S. Livestock Sanitary Association,

the American Veterinary Medical Association, and several other livestock industry groups have recognized the need for such a service and, for many years, have recommended the establishment of a complete reporting system.

As early as 1920, the U. S. Livestock Sanitary Association adopted a resolution recommending that livestock sanitary authorities in the States gather reliable information about the health of livestock and all outbreaks of communicable diseases and forward it to the U. S. Department of Agriculture for consolidation and publication.

Recommendations were made to correlate this information with the work of diagnostic laboratories throughout the United States. An extensive survey was conducted in 1947 by the Committee on Morbidity and Mortality on the needs for such information, the ways in which it might be gathered and distributed, and the Federal, State, and private agencies that might participate.

In 1949, the Committee again reviewed the situation, and recommendations were made and adopted by the association to assist the U. S. Bureau of Animal Industry in establishing a system for the collection and dissemination of statistics on livestock diseases, in cooperation with State livestock sanitary officials.

In November 1955, an Animal Disease Reporting System was established in the Agricultural Research Service. The Special Diseases Eradication of the Animal Disease Eradication Division has the responsibility for the collection and correlation of all animal disease morbidity and mortality information available to the ARS; to establish means for collecting the information from other agencies of the Federal Government and the States; and to disseminate it in systematic reports designed to be of maximum assistance to the livestock and related industries, practicing veterinarians, and agencies of the State and Federal Government concerned with the prevention, treatment, control, or eradication of animal diseases.

Starting with the month of January 1956, monthly Animal Morbidity Reports have been prepared, and about 1250 copies distributed each month to State veterinarians, ADE Division Stations, State health officials, deans of veterinary schools, associations, libraries, publication, etc., and within the Department's Washington offices. Foreign distribution includes those countries which have requested the report be sent to them.

For the first few months, the report included only the reported incidence of brucellosis, tuberculosis, paratuberculosis, scabies, vesicular exanthema, anthrax, equine encephalomyelitis, scrapie, dourine, glanders, and bluetongue. Starting with the June 1956 report, the format of the report was revised. A more attractive

arrangement was designed, a better species breakdown developed, and rabies and hog cholera were added to the list of diseases covered. Subsequent revisions removed dourine, glanders, and vesicular exanthema, and added cattle fever ticks and screwworms.

In addition to statistical information, material of general interest has been included.

A new monthly report was initiated in January 1958 when "Consolidated Reports: Animal Diseases at Public Stockyards and Establishments" was prepared and distributed. This is a consolidated report of the diseases encountered at the 58 public stockyards operating under ADE Division inspection and at the 532 slaughterhouses operating under Meat Inspection Division inspection. This report provides a ready reference to enable program sections, regulatory officials, research workers, and others to more accurately estimate the incidence of livestock diseases at a given time and over a period of time, and aids them in planning for the future by recognizing, at an early date, trends in animal disease incidence.

The National Report of Animal Diseases was first compiled and distributed in July 1958, and has since been distributed monthly. Calendar year summaries are being prepared.

In addition to monthly reports, and their animal summaries the following annual reports are prepared and distributed: "Annual Report of Cooperative State-Federal Sheep and Cattle Scabies Eradication"; "Reported Incidence of Rabies in the United States"; "Reported Incidence of Infectious Equine Encephalomyelitis and Related Encephalitides in the United States"; "The Incidence of Bluetongue as Reported in the United States"; and special Animal Morbidity Reports.

A more comprehensive system was developed to summarize the incidence of animal diseases as revealed by the cooperative animal disease reports from various States and from other available information.

CATTLE FEVER TICK ERADICATION

NATURE OF DISEASE

Cattle tick fever (also called bovine piroplasmosis, Texas fever, and splenetic fever) is a specific infectious disease of cattle caused by a microparasite (Babesia bigemina) and is transmitted by ticks (Boophilus annulatus and B. microplus) from infected to susceptible animals. The former ticks infest horses as well as cattle and the latter may, in addition, be carried by sheep and goats.

The acute disease is characterized by a rise in temperature of 106° to 107° F., inappetence, and marked depression. Anemia develops as red blood cells are destroyed, and mucous membranes become pale and often icteric. Hemoglobinuria is frequent. Severe acute cases lead rapidly to prostration and death in 5 to 8 days after onset. Mortality may approach 90 percent in susceptible animals. Diagnosis is confirmed by the demonstration of B. bigemina in stained blood smears.

Mild cases show gradual recovery over weeks or months. Chronic cases occur with periodic febrile attacks, anemia, diminution of appetite and emaciation, with relatively low mortality. Cattle native to enzootic areas may develop mild, immunizing attacks as calves, while introduced cattle show heavy losses.

ECONOMIC IMPORTANCE

Cattle affected with tick fever become anemic, lose weight, give less milk, and many (particularly those not previously exposed to the disease) die. Hides are damaged by the ticks and quarantine restrictions increase the cost of shipping animals. This disease caused estimated losses of \$40,000,000 annually in the United States before it was eradicated. This estimate is based on cattle prices considerably under present prices and during a period when the number of cattle was less than now. If tick vigilance were not maintained, the disease would quickly spread into this country, resulting in losses considerably in excess of those previously experienced.

HISTORY

Cattle tick fever is indigenous in the tropical and subtropical regions of the world. The disease probably spread into the southern part of the United States from the West Indies and Mexico, apparently as early as 1796.

The nature of the disease was not understood until 1889, when scientists of the United States Department of Agriculture discovered that the causative agent was a protozoan transmitted by the cattle tick, Boophilus annulatus. This discovery furnished the first experimental proof that disease can be borne by arthropods and is regarded as one of the great achievements of medical research. The ticks transmit the protozoa to their progeny transovarially.

The first step to control the vector, B. annulatus, was to determine the northern boundary line of the infested area. The first quarantine order was issued July 3, 1889. When it became general knowledge that this tick was the intermediate but essential factor in transmission and perpetuation of this disease, its eradication was advocated. In 1906 the first Congressional appropriation was made for this purpose and an extensive eradication program was begun. The vector

was eradicated from the United States by 1943, except for a narrow buffer zone in southern Texas along the border between the United States and Mexico. Reinfestation occurs there frequently because the adjacent area of Mexico is badly infested.

On April, 23, 1957, cattle-fever ticks (B. microplus) were found at a livestock market at Okeechobee, Florida, by a State inspector.

Since the last reinfestation in Florida (eradicated in 1950), cattle passing through all auctions throughout the State had been inspected routinely for ticks by experienced inspectors, and all cattle except those selling for slaughter have also been dipped. It was as a result of this routine search for fever ticks that the ticks were found. Steps were taken immediately to treat the infested and exposed herds and place a State quarantine on the area likely to be infested. Action was also taken to trace movements of animals to and from the area during the last two or three years, to place the premises involved under State quarantine, and to investigate the possible source of the ticks. In all, more than 100 ranches in 10 Florida counties were placed under quarantine.

The campaign by the Florida Livestock Board and the U. S. Department of Agriculture to eradicate the outbreak of cattle-fever ticks was pronounced successful in September 1958.

No cattle ticks had been found for more than a year. During the outbreak, cattle on a total of 15 premises were found to be infested. The ticks were eradicated by systematic inspections and dippings.

Florida was the last State (with the exception of Texas where a narrow buffer zone along the international border is still infested) to be freed of fever ticks. The last Federal quarantine in Collier and Hendry Counties in the Big Cypress Swamp area had been lifted in December 1943.

All territory in Mexico adjacent to the international boundary between Texas and Mexico along the lower Rio Grande River is tick infested, and reinfestations in Texas by ticks carried by Mexican animals illegally entering the United States occur frequently. The river, serving as the boundary, is not an effective barrier against such illegal movements. A buffer area, under Federal and State quarantines, extends from Del Rio to the Gulf of Mexico, approximately 500 miles. This zone is constantly patrolled by Department inspectors who, in cooperation with Texas livestock sanitary authorities, work diligently to reduce the introduction and prevent the dissemination of the ticks. The area under quarantine includes parts of Cameron, Hidalgo, Kinney, Maverick, Starr, Val Verde, Webb, and Zapata Counties.

The fever tick was eradicated from California many years ago. However, this State also has a common border with infested areas in Mexico, and animals illegally entering the United States reintroduce ticks from time to time.

In Puerto Rico an active tick eradication program, which has been under way for a number of years, is nearing completion. Here the tropical variety of the fever tick was prevalent, and it was necessary to treat sheep and goats as well as equines and cattle.

CURRENT PROGRAM

The active cooperative eradication program, which includes inspection, quarantine, and dipping, is now confined to the buffer area in Texas, and to Puerto Rico.

In considering measures for eradicating the tick, it is evident that the pest may be attacked in two locations--in the pasture and on the host. Animals may be freed of ticks in two ways: (1) With ~~an~~ acaricide that destroys all the ticks, or (2) They may be pastured at proper intervals on tick-free fields until all the ticks have dropped. Dipping is the method generally used. The pasture-rotation method is more complicated and tick-free fields are seldom available.

In freeing pastures the method followed may be either direct or indirect: (1) The direct method consists in excluding all hosts of the vector from the pasture until all the ticks have died of starvation. (2) The indirect plan consists in permitting the cattle and other animals to remain on the infested pasture and treating them at regular intervals with agents destructive to ticks, thus preventing engorged females from dropping and reinfesting the pasture. All the seed ticks on the pasture, or those that hatch from eggs laid by females already there, will die eventually. Those that get on the hosts will be destroyed by the treatment, while those that fail to find a host will starve.

In the United States the only approved procedure for treating animals to destroy the cattle-fever tick is by dipping them at 14-day intervals in an arsenical solution containing 0.22 percent of arsenious oxide. The strength of the dipping solution is determined by a chemical test before each use.

Veterinarians and inspectors should be alert for ticks of Boophilus spp. not only on animals in areas along the border between the United States and Mexico, but also on routine inspections at concentration points, prior to issuing health certificates, etc. When it is suspected that such ticks may be present, the proper officials should be notified immediately, and specimens should be collected for laboratory identification.

VISUAL AIDS

- A. Film, "The Threat of the Cattle Fever Tick."
- B. Afford opportunity to observe preserved specimens of cattle-fever ticks, if possible.

REFERENCES

- A. Farmers' Bulletin No. 1625, "Tick Fever."
- B. 9 CFR, Part 72--Texas (Splenic) Fever in Cattle.

FEDERAL INTERSTATE REGULATIONS

The following programs are administered under the supervision of the Chief Staff Officer, Interstate Regulations Enforcement:

- (1) Enforcement of regulations promulgated under authority of the *Animal Quarantine Laws. (These laws were enacted in 1884, 1903, and 1905).
- (2) Enforcement of *28-Hour Law. (Enacted in 1906).

A violation of the Animal Quarantine Laws is a criminal offense, whereas, a violation of the 28-Hour Law is a civil offense. In the first instance, the Government is required to prove beyond a reasonable doubt that the violation was committed by the defendant. In the second instance, the Government may prove by a preponderance of evidence that the violation was committed by the carrier.

REGULATIONS RELATING TO THE ENFORCEMENT OF THE ANIMAL QUARANTINE LAWS

The regulations promulgated pursuant to the Animal Quarantine Laws are contained in parts 71 through 83 inclusive of Title 9, Code of Federal Regulations. These regulations are designed to prevent the spread of communicable diseases by controlling the interstate movement of livestock, including poultry, which are apparently free of disease or exposure thereto. Special provisions of the regulations permit the interstate movement of reactors to the tuberculosis, brucellosis, and paratuberculosis tests, but only under certain carefully supervised conditions which insure the proper handling of such reactors until their final disposition.

The regulations cited above also provide for the proper cleaning and disinfecting of all cars, boats, and other vehicles used in the interstate transportation of diseased livestock and poultry. These sanitary precautions also apply to yards and other premises used in connection with such shipments.

Inspection for compliance with the Animal Quarantine Laws is conducted throughout the United States at highway and railroad points, stockyards, and livestock centers. Apparent violations are reported to the Department for further investigation and possible prosecution.

Where additional information is needed, investigators are instructed in detail as to the type of affidavit and other pertinent information required.

* Copies of the applicable laws are included in the publication "Regulations and Laws Administered by the Animal Disease Eradication Division - January 1, 1959".

If the facts then indicate prosecution is warranted, the case is forwarded by the Washington Office to the Office of the General Counsel (OGC) for review. With the concurrence of that office, the case is then referred to a United States Attorney to institute prosecution proceedings. Notice of this referral is sent from the Washington office to the Animal Disease Eradication Division's Veterinarian in Charge in the State where the United States Attorney is located with the request that the Veterinarian in Charge furnish whatever assistance the Attorney may require in prosecuting the case.

Occasionally, a violation may occur which may include strong extenuating circumstances. In such event, the Department may recommend that the case be disposed of by letter of warning in lieu of formal prosecution. If concurred in by the Office of the General Counsel, such recommendation is then forwarded to the Department of Justice in Washington instead of the United States Attorney.

When the case is terminated, the Washington office will inform the field station(s) concerned of the results.

28-HOUR LAW

The provisions of the 28-Hour Law require that livestock shipped interstate must be unloaded within prescribed intervals for feed, water, and rest in properly equipped pens. In some instances the animals may be fed and watered without unloading into pens, provided adequate space is available for rest in the cars. The law is applicable only to railroad and water shipments; however, attempts have been made to apply its humane principles to motor truck shipments. The 28-Hour Law does not provide for the issuances of regulations, thus, its administration is governed by the language of the law itself and court decisions subsequently rendered.

Enforcement of the overconfinement provisions of the 28-Hour Law is performed by examination of records maintained by the carriers (waybills and similar documents). Inspections are periodically made at the more than 800 feed, water, and rest stations throughout the United States to insure that the facilities and equipment are adequate and properly maintained. Railroads operating such facilities are promptly notified to correct unsatisfactory conditions found by our inspectors. Apparent violations of the 28-Hour Law are reported to the Department for further investigation and possible prosecution by a U. S. Attorney.

UNIFORM PROCEDURES FOR REPORTING APPARENT VIOLATIONS

Instructions for reporting apparent violations of the Animal Quarantine Laws and the 28-Hour Law are contained in the publication "A Guide for the Enforcement of Regulations Governing the Interstate Movement of Livestock and Poultry." (ARS 91-13).

PUBLIC STOCKYARDS INSPECTION ACTIVITIES

Public stockyards inspection was authorized by the Act of May 29, 1884, creating the old Bureau of Animal Industry. The Act, among other things, specified that investigations were to be made of contagious, infectious and communicable disease along lines of transportation from all parts of the United States to ports from which livestock are exported, and provided for such disinfection and quarantine measures as may be necessary to prevent the spread of disease from one State or territory to another.

Contagious pleuro-pneumonia of cattle was the first disease eradication effort undertaken by the Department in cooperation with the States affected. Controlling the interstate movement of cattle through market centers greatly shortened the time required to completely eliminate the disease. This led to the first Order issued October 20, 1890, requiring inspection at public stockyards of cattle destined overseas. The discovery at that time that cattle ticks transmitted Texas or splenic fever made this disease of first importance to be controlled by stockyards inspection. In 1897 inspection was extended to include sheep for scabies, and in 1903, cattle for scabies. The scope of work was further extended in 1905 to the inspection for all communicable diseases of all livestock received at public stockyards.

Since the beginning of livestock disease control and eradication work, the unrestricted movement of diseased animals has been recognized as one of the most important factors in the spread of disease. Due to the threat from abroad of foreign livestock diseases, particularly foot-and-mouth disease, proper and efficient inspection at livestock markets is more essential now than at any other time in the past. Of prime importance in coping with this and other dangerous communicable diseases are early detection and prompt diagnosis. For this reason, the inspection of livestock at market centers is almost indispensable in the control of disease. The sooner a disease is discovered and the affected animals isolated the fewer will be the number that become infected and exposed. By the same token, the sooner the disease is traced back to point of origin the less likelihood there will be of further dissemination of the disease from that locality. The value of the service to the livestock industry as a whole would be difficult to estimate.

Livestock at public stockyards come from widely separated areas and this inspection offers an excellent opportunity to examine for disease a cross section of the livestock population of the country almost daily at a minimum cost. Our greatest defense against the widespread dissemination of the disease may be found at public stockyards where inspection is maintained by employees who are trained to detect foot-and-mouth disease, vesicular exanthema, and other devastating maladies.

Livestock-inspection service is maintained at 58 stockyards in 56 cities. Veterinarians who, through years of experience, have become skilled in the detection of animals affected with disease or other abnormal conditions are constantly on duty examining the animals that pass through these stockyards each day. These veterinarians are assisted by laymen skilled in such work as the inspection of livestock, supervising the dipping of cattle and sheep for scabies, and cleaning and disinfecting premises, cars, and trucks used in the handling of diseased animals.

Insofar as possible all livestock that arrive at these market centers during daylight hours are inspected at the time of unloading, while animals that are unloaded and yarded during the night are inspected early in the morning before the trading commences. If signs of any communicable disease are detected, all infected and exposed animals are promptly segregated and treated or otherwise handled in accordance with Department regulations. The inspectors are constantly on the watch for animals showing any symptoms suspicious of foot-and-mouth disease or vesicular exanthema.

The livestock sanitary official of the State in which a diseased shipment originates is notified as well as the animal disease control field station in that State. In this way centers of infection are located, and the spread of disease to other herds and premises is frequently prevented by the prompt application of appropriate sanitary control measures. Instances are not uncommon in which the detection of disease in a shipment at a public stockyard is the owner's first inkling of the existence of infection on his premises.

Not only are incoming shipments of livestock inspected, but a re-inspection is made of outgoing shipments, both to detect disease and also to determine whether there has been compliance with certain requirements, such as the tests for tuberculosis and brucellosis, dipping for scabies, and immunization against hog cholera.

The very large scale on which this livestock-inspection service is conducted is indicated by the fact that each year there pass through these public markets for slaughter or other purposes between 60 and 70 million livestock.

Interstate shipments of livestock for immediate slaughter may be made to public stockyards under regulations that are less restrictive than if the animals are to be forwarded direct from a country point in one State to a country point in another State for feeding, breeding, or dairy purposes. If, however, it is found after arrival that some of the animals would sell to better advantage for purposes other than slaughter, they then must meet

the same test requirements that would have been applicable had they been shipped direct to a country point in another State.

Department employees at public stockyards supervise the application of the tests for tuberculosis and brucellosis and see that those animals which do not pass a satisfactory test are removed from the consignments to which they belong and are slaughtered or otherwise properly disposed of, as may be prescribed in the regulations. The bulk of all the cattle that react to the tests for tuberculosis and brucellosis in the present cooperative Federal and State eradication campaign are sent to these public markets for slaughter. The employees at the markets exercise the utmost vigilance to see that the identity of these reactors is maintained and that they are penned separately in the yards and required to be disposed of for immediate slaughter at establishments operating under Federal meat inspection.

Whenever disease is found in a shipment of livestock arriving at a Federally inspected stockyards steps are taken immediately to see that the pens occupied by the animals, the car or other vehicle in which they have been transported, and the yards through which they have been handled at the point of origin-- and en-route if they have been unloaded for feed, water, and rest--are properly cleaned and disinfected.

Another activity over which the Department exercises supervision at public stockyards is the immunization of swine against hog cholera. Included in receipts at many of the large markets are a considerable number of pigs which are not in first-class slaughter condition. Under the regulations in effect it is possible to sort out such animals from the consignments in which they are received and sell them for interstate shipment to country points for further feeding to make them suitable for slaughter, provided they are properly treated against hog cholera.

Such swine may be moved interstate from public stockyards for any purpose only to States the laws, rules and regulations of which provide for the segregation and quarantine of imported hogs for a period of not less than 3 weeks. In order to be eligible for such shipment certain inspection and certification requirements must be met. The swine must be inspected by a Federal veterinary inspector at the yards. If they are found free from symptoms of cholera or other communicable diseases and in a thrifty condition, they must be treated by an accredited veterinarian under Federal supervision, provided the temperature of each animal is taken before treatment and that only those with a temperature of less than 104 F. shall be certified for interstate movement. If the inspector finds any hogs affected with cholera, the entire lot to which they belong may be treated by a competent veterinarian under Federal supervision and

held in a portion of the yards set aside for that purpose. At the expiration of not less than 30 days, if no signs of disease are observed on examination of the hogs, they may be released for shipment. All immunized swine must be disinfected by dipping in or spraying in a bath containing a 2 percent solution of a permitted creylic disinfectant, must be accompanied by a certificate issued by a Federal veterinary inspector, and must be transported in cleaned and disinfected cars or other vehicles.

Consignments of sheep and cattle received at public stockyards in which scabies infection is found or which have been exposed to the disease, if not sold for immediate slaughter, are dipped in accordance with applicable regulations under Federal supervision. Included in the receipts of sheep at these stockyards are many animals not in a fit condition for slaughter. These are sorted out of their consignments and sold for feeding or breeding purposes. Many of them are dipped as a precautionary measure to comply with the requirements of the State to which they are destined or at the request of the purchasers, even though there is no actual knowledge that they have been exposed to scabies. This dipping also is performed under Federal standards and supervision.

In the past, when practically all livestock moved to market by rail, arrivals could be anticipated in advance through the cooperation of transportation lines and stockyard officials. This made it possible to integrate an efficient inspection service with the orderly unloading, yarding, weighing, and disposal of all animals. Now the heavy receipts by trucks make it exceedingly difficult to assure that every animal is properly inspected. These unscheduled arrivals in lots, varying from one animal to large truck loads with the capacity of a railroad car, pose a problem at the stockyards where too often the design, size, and arrangements of facilities are those developed for rail transportation, and which have had to be remodeled to take care of truck shipments. Another important factor from an inspection standpoint is that dock facilities for loading and unloading truck and rail shipments are necessarily at different locations, thus requiring the services of two or more inspectors where formerly one sufficed.

Specifically Approved Stockyards: Under the new Federal regulations to prevent the spread of brucellosis and paratuberculosis, effective January 1, 1957, provision was made for specifically approved stockyards. At these markets the cost of inspection service is paid by the State. Operators of such yards, which are usually auction markets, sign an agreement to permit no cattle to be removed without the proper certificate or other form of release issued by the inspector, to segregate brucellosis and paratuberculosis reactors until they are sold for slaughter, furnish suitable cattle chutes for restraining animals, laboratory space for conducting brucellosis

testing, provide adequate facilities and services for the cleaning and disinfection of trucks or other vehicles transporting such reactors and otherwise cooperate with the State and Federal officials to effectuate the provisions of the brucellosis and paratuberculosis regulations. As of January 1, 1960 more than 1700 livestock markets have been specifically approved by the Director of the Animal Disease Eradication Division. These specifically approved markets operating under veterinary inspection at State expense to enforce brucellosis and paratuberculosis regulations, should not be confused with public stockyards where Federal inspection is maintained and all animal quarantine laws and regulations are enforced.

Posted Stockyards: This is a term used for a stockyard which has been posted by the Secretary pursuant to the Packers and Stockyards Act of August 15, 1921, regulating the business practices of stockyard owners, sales agencies and others operating at a stockyard. Apparently there is some misunderstanding by livestock people, stockyard employees, and occasionally State and Federal inspectors, regarding the inspection service of the Animal Disease Eradication Division, ARS, and the Packers and Stockyards Division, AMS. Most of the stockyards with ADE inspection also are posted under the Packers and Stockyards Act.

There need be no confusion with respect to the services these two agencies provide. The Packers and Stockyards Division is concerned primarily with trade practices such as fees for selling livestock by commission companies, service charges like yarding, weighing, feeding, dipping, dehorning, branding, etc., furnished by the yard company and vaccination, testing and otherwise treating animals by practitioners. Whereas, our Division's principal interest is in the health of the animals and in taking steps to prevent the dissemination of disease in interstate commerce.

To summarize: the purpose of public stockyard inspection is (1) to restrict the movement of diseased animals, (2) supervise the treatment and proper disposition of diseased animals, (3) notify States of origin of diseased animals received, (4) supervise the cleaning and disinfection of infectious stockyard pens and facilities, and transporting cars, trucks, and other vehicles, (5) issue certificates for the interstate movement of animals which have been inspected and found to be apparently free of any contagious, infectious, or communicable disease, (6) supervise the dipping, vaccination, and testing of animals prior to shipment.

POULTRY DISEASES

There are over 60 recognized diseases of poultry with which we must be prepared to deal. The most fatal of all poultry diseases is European fowl plague. This disease gained entry into the United States, and was recognized in the New York-New Jersey area in 1924-25 and again in 1929. Both outbreaks were eradicated by emergency State-Federal cooperative programs.

Back in the 1930's and before that time, fried chicken was a delicacy which was occasionally enjoyed in the spring as the chicks reached "frying-size." Baked chicken for Sunday dinner was an occasion to look forward to in those days.

The war years and the shortage of red meats were stimulating factors to the broiler industry which had started in some of the Southeastern States during the late 30's. Geneticists developed rapid growing strains of meat-type chickens, and various growth stimulants were showing evidence of success. During the years when red meats were in short supply, our population became accustomed to eating broiler chickens. After the war red meats became more plentiful, but their prices skyrocketed, and our populace continued to consume broilers to the extent that the industry continued to expand.

In 1934 there were 34 million broiler chickens produced while in 1955 (the latest available complete figures) there were one billion, 78 million produced. This represents over 500 percent increase in production during the 21-year period.

The turkey industry has increased at a tremendous rate during the same period. Their production has increased nearly 300 percent.

In recent years there were over 60 billion chicken eggs produced annually in the United States. About 2 billion were used for hatching purposes and the balance for table use. The annual income from the poultry industry is estimated at over 6 billion dollars, and represents approximately 18 percent of the total income from all agriculture.

Along with its rapid expansion, the poultry industry has suffered some growing pains. In recent years the industry has become highly competitive which is a direct result of narrow profit margins. This problem has been overcome to some extent by mass production methods. Large flocks are the rule rather than the exception.

The large investments in chicks, housing, and other essential equipment, as well as the land for the operations, are a major problem. In addition the feed bills on large flocks are a major item of expense. These costs have resulted in what is called "integrated operations" or more commonly "integration".

Integrated operations are of various types depending upon the degree. One common type is where the feed dealer furnishes the grower with chicks and feed. This is routinely done under written contract whereby the costs are deducted from the sales and the profits divided between the contractor and the contractee at an agreed upon ratio.

A true integrated operation is one in which an individual or a corporation owns and operates the breeder flock, feed business, hatchery, broiler plant, slaughtering establishment, and in some cases, even the retail outlets where the final product is sold. There are a number of these operations but the average integrated operation is generally a combination of these factors.

Where individuals or corporations are financing extensive growing operations, they do everything possible to insure their investment. This usually includes disease prevention and control in all flocks. The parent organization may employ a veterinarian for the disease phases, but the disease control phase is generally handled by a so-called "service-man." These servicemen are supervisors and have the final decision as to what disease prevention and control measures are taken. They are prone to assume their capabilities as being far beyond that of the average veterinarian whereas my experience with them has been that they are just plain good salesmen. Few of them have any formal education which would qualify them in the disease field.

The latest loss estimates indicate that the industry suffers an annual 15 percent loss of adult birds. There are no figures on the losses of broilers. The best available information indicates that broiler losses vary from 5-10 percent during the normal growing period.

It is estimated that our present poultry industry must increase its production 25 percent by 1965 if we are to feed our growing human population. Part of the necessary increase could easily come through disease prevention, control, and eradication.

Traditionally the veterinary profession has avoided furnishing the same type of professional service to the poultry industry that it has furnished to the large animal industry. This is not entirely the fault of the profession, but I am sure they must assume much of the responsibility. The exception to this has been the veterinary pathologist. All major poultry producing States have poultry diagnostic laboratories which are staffed by qualified personnel. Many of the State educational institutions are carrying on poultry disease research.

The poultry industry has grown rapidly and is traditionally independent from all other types of animal production. So far they have assumed the attitude that they can handle their own problems without outside help. Up to this point we have to assume they are correct since only five State Livestock Sanitary Officials have had direct control over poultry diseases until just recently.

The history of disease eradication has been that no disease of animals or poultry has ever been eradicated on an individual herd or flock basis. With this in mind, it is only reasonable to assume that poultry diseases will not be the exception. Therefore we must presume that poultry disease control and eradication programs must be developed and eventually carried out on an area basis. Animal Disease Eradication Division has the responsibility for developing and administering area poultry diseases prevention, control and eradication programs.

The ADE Division recognized the need for national coordination of poultry disease control and eradication programs and the Poultry Diseases Section was activated in July of 1956. Many problems in this field exist and the answers to some of them are quite elusive.

This Section has established contact with the poultry industry, research workers, other interested governmental agencies, and the various responsible State officials. In many States the responsibility for poultry diseases is not or has not been vested in the State livestock sanitary official. Instead the authority frequently rests with the head of the Poultry Department of the State agricultural college or some other person entirely unrelated to the usual disease control channels. This has made the work of this Section a difficult one and will remain a problem for some time to come.

The Division did not have veterinary personnel with experience or training in poultry disease work. This problem is being overcome by the poultry disease diagnostic training courses being conducted at Iowa State College. To date 49 veterinarians from 36 States, Puerto Rico, and Mexico have received the training. Thirty-six of the diagnosticians are ADE, 10 are State-employed, and three are AMS (Poultry Inspection) supervisors.

Supplement 2 to ADE Division Memorandum No. 501.4 entitled, "Investigation of Suspected Emergency Poultry Disease Outbreaks," has been developed and distributed to the field. In addition a poultry diagnostician's kit of equipment has been developed and will soon be distributed one to each ADE diagnostician.

Part 82, Title 9, CFR entitled, "Psittacosis or Ornithosis in Poultry," has been developed and is presently in effect. This regulation prohibits the interstate movement of diseased or exposed birds.

Mandatory Federal poultry inspection became effective on January 1, 1959. Once this law became effective, we anticipated general concern of the industry in disease control and eradication due primarily to the reduction in revenue, directly and indirectly, from high condemnation rates in slaughtering establishments previously operating without inspection. When the producer finally realizes the amount of his losses due to disease, he will likely demand action by State and Federal Regulatory officials.

Until such time as the industry demands action, this Section is gathering information on the latest research developments and the incidence of the diseases in the field. Through our present organization, we are in a position to deal with any foreign-type poultry disease which may gain entry into the United States.

PROGRAM APPRAISAL

With the realignment of Division functions approved in March, 1958, program operations were divided into Line and Staff functions. In addition, the realignment provided for administrative management and a new function of Program Appraisal.

Program Appraisal is chiefly concerned with developing and conducting comprehensive programs of review and appraisal of Division activities to assist the Division at all levels of supervision to achieve more efficient and effective program administration.

Program appraisal is a staff or advisory function rather than a line or operating function. It is independent of the officials who are directly responsible for the operations it reviews. The program appraisal staff does not have authority to make or direct changes in the procedures or operations of the Division. Its method of operation is to make independent analyses, reviews and evaluations of existing activities and procedures, to report on conditions found, and to recommend changes or other actions for the consideration of the Director and operating officials. Its function is to present its views and thoughts constructively to the Director of the Division for his use in determining the action to be taken, if any. Any corrective action that results will then be instituted by the Assistant Director, Field Direction.

The functions and objectives of Program Appraisal are:

1. Evaluate the adequacy and effectiveness of policies and procedures.
2. Determine whether programs are being administered in accordance with established policies and procedures.
3. Evaluation of various Division programs at National and State levels..
4. Determine overall effectiveness, efficiency and economy of operations.

Station reviews and appraisals are made by visits to the various stations. During such visits as many as possible of the various field personnel are contacted and accompanied during their daily routine activities. One or more of each of the following types of employees are visited and accompanied as time permits:

District and area veterinary livestock inspectors, stockyard veterinarians and fee-basis veterinarians. Other people, including Extension personnel, representatives of farm organizations, veterinary associations and State employees are also contacted. Laboratories, Federal stockyards, inspection stations and approved auction markets are also visited.

The visits to our own employees are usually made with no advance notice (in order that a true picture of normal field activities will result). The following subjects are reviewed with field personnel:

- Supervision
- Plan of work and work assignments
- Public relations
- Knowledge of individual diseases and programs
- Attitudes concerning programs
- Informational material available
- Equipment and supplies
- Records and reports
- Observation and appraisal of field work and technique.

It is most important that factual information be obtained from field personnel in regard to all procedures used in the various programs with which they are in contact. It is equally important that problems encountered by field personnel that handicaps them in achieving their objectives be clearly defined. The importance of finding existing deficiencies and of defining problems is the key to efficient and economical program operations. It is not the single purpose of program appraisal to unearth shortcomings of personnel or programs. On the contrary, it is necessary to locate and define deficiencies and problems so that all of the facilities of the Division can be utilized in helping to correct the deficiencies and solve existing problems.

During station appraisal, in addition to the time spent with field personnel, considerable time is spent with the Veterinarian in Charge. Each individual program is reviewed, particularly to determine progress and to define problems that may be interfering with progress. Of particular importance is a review of program objectives and goals.

Another important objective of a station appraisal is to determine the cooperative relationship that exists between the Federal and State offices. In addition, it is important to have an accurate appraisal of the relationship with and the degree of support of various farm and livestock organizations.

Other areas that are reviewed at the station level include work organization and planning, utilization of personnel, policies and procedures, training programs, funds and records.

The Program Appraisal staff is independent of line and staff officers who are directly responsible for programs and program operations that the appraisal staff is charged with appraising. This is necessary in order that conclusions and recommendations can be made objectively and without reserve.

In summary, by providing a comprehensive and unbiased appraisal of the progress of the various programs and problems involved, the Director's office, through the line and staff offices will be in a better position to effectively plan and direct the work of the Division.

LABORATORY SERVICES OF THE ADE

In 1884 the former Bureau of Animal Industry consisted of a staff of four persons, namely, Dr. D. E. Salmon, Chief; Dr. Theobald Smith, a young scientist in his twenties who was preparing to do battle with Tick Fever; Mr. Kilborne, Batchelor of Agriculture; and Alexander, an ex-slave, who "sat about solemnly, and when urged, got up to wash the dirty bottles or chaperon the guinea pigs." From this beginning the BAI grew into an organization with a broad field of responsibility in research, diagnosis, and eradication of diseases occurring in all types of domestic animals. From the very beginning when Theobald Smith set out to hunt microbes in a little room in the attic of a government building, the importance and need of laboratory services to augment disease control and eradication activities has been recognized. You, who are engaged in disease control and eradication in the field are most cognizant of all of the importance of laboratory services to your everyday activities. Correct diagnosis and the supplemental information provided by the laboratory study of disease conditions are the most important factors in formulating successful programs for effective disease control.

As a result of reorganization in the Agricultural Research Service, research activities relating to animal diseases are now administered under the Animal Disease and Parasite Research Division. Diagnostic and various other laboratory activities of the Animal Disease Eradication Division previously performed for the most part by the Pathological Division of the former BAI, are now the responsibility of Laboratory Services, ADE Division.

In order to acquaint you with the laboratory programs that are in progress, and those that will be available in the future, I would like to review with you today our present and projected organization. The word "projected" is used since we are looking ahead to considerable expansion of diagnostic and related laboratory services in the regulatory field with the completion of the new U.S.D.A. Animal Disease Laboratory at Ames, Iowa.

All laboratory services have the basic requirement of adequate facilities. As most of you know, in June 1955, a group of competent scientists from outside the Department were asked to inspect our animal disease laboratories located at Washington; Beltsville, Maryland; Auburn, Alabama; and Denver, Colorado, to determine the possible hazards to human health involved in working in these facilities. The committee reported that laboratories in use were not adequate to safeguard workers and other persons in

the buildings from exposure to disease or the experimental work from cross-examination. Because of this report it was decided to discontinue all laboratory work in the research and regulatory fields at Washington, Auburn, and Denver. This has resulted in the curtailment of some work, and the need for establishing suitable laboratory facilities elsewhere, and entering into cooperative programs with the States for conducting essential services that cannot await completion of the new laboratory. Various State Laboratories have been most cooperative in lending their assistance as needed during this interim period. Our field personnel too have adjusted to the situation very well, and have realized that our shortage of laboratory space and service is an interim situation.

Laboratory Services, ADE Division, provide diagnostic and related laboratory services for the animal disease control and eradication programs of the Division. This work which is presently provided by "interim laboratory units" will be transferred to the National Animal Disease Laboratory when that structure is completed in late 1960. Interim laboratory units are now in operation at Washington, D. C.; Beltsville, Maryland; Ames, Iowa; and under cooperative agreement with several State institutions and the U. S. Public Health Service.

The Beltsville laboratories are located at the ARS Animal Disease Station. One of the major functions of the Beltsville laboratory is the production of Brucella antigens used in the State-Federal Programs for the eradication of brucellosis. During the 1959 fiscal year 1,191,520 mls. of Brucella antigen were produced by this unit. In this field, also, Laboratory Services has the responsibility of supervising and consulting with the State-ADE Brucella Testing Laboratories in the various States to promote the accuracy and standardization of testing procedures. Serological work-shops for the orientation of serologists were held during the last fiscal year. These work-shops were attended by twenty-eight serologists and were held at Beltsville, Maryland; Baton Rouge, Louisiana; Ames, Iowa; and Provo, Utah.

Limited survey testing with Leptospira pomona antigen is also being undertaken in several States by this unit.

Brucellosis vaccine, Strain 19, is produced commercially. However, it is the responsibility of Laboratory Services to examine representative samples of this vaccine to assure its compliance with specifications and program requirements. During the fiscal year 1959, 8,018,926 doses of this vaccine were approved for use in the Division's programs.

Tuberculin formerly produced by the Agricultural Research Service is not purchased under Government contract from commercial sources. Laboratory Services supervise the contracting and conduct the testing of it to determine whether it meets program specifications and requirements.

Serological testing is another important function of the Laboratory Services unit at Beltsville. This unit is responsible for the serological diagnosis of vesicular diseases and as vesicular exanthema and vesicular stomatitis, infectious bovine rhinotracheitis and their differentiation from foot-and-mouth disease. Serological diagnosis of anaplasmosis is another activity that is conducted at Beltsville that has assumed greater importance in the last few years. More and more States are manifesting interest in the establishment of an eradication program for this disease. The serological unit at Beltsville also tests all equine serum samples submitted from the various quarantine stations and other points for dourine and glanders.

The Division's Chemistry Laboratory is located in the East Wing of the Administrative Building of the USDA and is responsible for the chemical assaying of dips and disinfectants. Limited chemical testing of biologicals used in Division programs is conducted by this laboratory.

In 195 , the Division established an interim diagnostic laboratory at the Division of Veterinary Medicine, Iowa State University, Ames, Iowa, under a cooperative agreement with Iowa State University. Present work conducted at Ames is in support of the Division's programs and includes diagnostic microscopic and macroscopic pathology, bacteriology, mycology, parasitology, and serology. A program to isolate and type cultures of Mycobacterium tuberculosis from tissue specimens collected on the killing floor, for additional information NGL reactors, has been established. Bacteriological examinations of milk samples for the isolation of *Brucella* are being conducted to supplement data on serological tests. A repository is also maintained for cultures used in biological products production and testing. Histopathological confirmation of scrapie is conducted at Ames. A reference center for the typing of animal leptospira isolates is being started. This activity has been attempting to evaluate the presently used serological procedures in leptospirosis diagnosis.

Because of the limited facilities available, the interim laboratory at Ames cannot undertake extensive diagnostic programs. However, services are not available which were previously available to us only from other agencies in the Department, or from State laboratories that were in a position to lend such assistance.

Laboratory Services has the responsibility of supplying technical assistance to a cooperative project with Montana State College for conducting a serological survey on the incidence of enzootic abortion in sheep. This work has been in progress since the summer of 1958.

A project has been established for an epidemiological study on the incidence of leptospirosis infection in sylvan fauna and domestic animals in certain sections of Pennsylvania. This work has a direct relationship to the Division's program for the eradication of brucellosis in cattle. It is being conducted at the University of Pennsylvania.

A cooperative agreement with Texas A & M College to produce and deliver to the Division by July 1, 1960, two million test doses of anaplasmosis antigen is supervised by Laboratory Services. Another two million is to be produced next year. This complex biological is no longer produced by the Animal Disease and Parasite Research Division at Beltsville. Plans call for the use of this complement-fixation antigen in testing programs for anaplasmosis to eradicate this costly disease.

Recognizing the importance of serological typing to the formulation of sound control programs for salmonellosis and Arizona infections of animals, the Division established a cooperative program, April 15, 1957, with the U. S. Public Health Service to supplement their activities in this field. This project is current in operation and is staffed with a bacteriologist from Laboratory Services. This permits State Animal Disease Diagnostic Laboratories to submit cultures for typing and study, thus contributing greatly to control programs for this important group of diseases.

A manual of laboratory procedures was completed in 1959 and has been distributed to all field stations and other laboratories. This manual describes laboratory procedures used in State-Federal cooperative laboratories. A Manual and Directory of Animal Diagnostic Laboratories in the United States has recently been completed. This manual has been distributed to all field stations, animal diagnostic laboratories, State Veterinarians, and others interested in animal disease control programs. There are presently 158 diagnosis of diseases in all species of domestic animals.

Epidemiological work is conducted for the Division by Laboratory Services. Most of this work has concerned anthrax and technical assistance in developing brucellosis and tuberculosis epidemiological projects.

Further training in the form of formal course work at colleges and universities is supervised by Laboratory Services. This entails the recommendations for approval of graduate programs as well as supervision and guidance given to individuals in such programs.

Now a final word about the new National Animal Disease Laboratory. As most of you know it is to be located a few miles northeast of the city of Ames on a 318 acre tract of land. The laboratory compound will occupy approximately 20 acres and will contain the laboratory proper, designated the small animal laboratory, and three large animal laboratories. The remainder of the land will be used to quarantine and house large and small animals to be used in diagnostic and research work. Laboratory Services for the regulatory Divisions of ARS will occupy approximately 20 percent of the total space, and will be divided into the various laboratory divisions discussed with you today. It is presently expected that the building will be completed in late 1960. Laboratory Services has the responsibility for planning, equipping, and organizing the Regulatory Laboratory in the N.A.D.L. This work has been in progress for the past two years under the supervision of Dr. Glenn B. Van Ness.

INTERNATIONAL INSPECTION AND QUARANTINE

By several Acts of Congress and by regulations which effectuate such statutes, the Animal Inspection and Quarantine Division is given broad authority and great responsibility in the protection of the livestock of the United States against communicable diseases of foreign origin.

It is also the responsibility of the Division, under appropriate statutes and regulations, to see that only healthy animals are exported and to provide for their humane handling and safe transport.

STATUTORY BASIS FOR REGULATIONS

(a) The Act of August 30, 1890 (21 U.S.C. 102-105).

1. Authorizes the quarantine of all cattle, sheep, all other domestic ruminants, and all swine imported into the United States at designated ports of entry and under prescribed conditions.

2. Prohibits the importation of cattle, other domestic ruminants, and swine which are diseased, infected with any disease or exposed to such infection within 60 days next before their exportation.

Note: Amendments to the basic statute permit the admission of cattle which have been infested with or exposed to fever ticks, from Mexico into Texas for any purpose and from the British Virgin Islands into the United States Virgin Islands for immediate slaughter.

3. Requires inspection of all imported cattle, other domestic ruminants and swine to determine whether they are infected with or have been exposed to any disease so as to be dangerous to other animals.

4. Authorize the inspection of all animals intended for exportation.

(b) The Act of February 2, 1903 (21 U.S.C. 111).

Authorize such regulations and measures deemed proper to prevent the introduction or dissemination of the contagion of any diseases of animals from a foreign country, and the seizure, quarantine and disposal of hay, straw, or similar materials, or meats, hides or other animal products coming from a foreign country.

- (c) The Act of June 17, 1930 (19 U.S.C. 1306).

Prohibits the importation of cattle, sheep, other ruminants, or swine, or fresh, chilled, or frozen meats from such animals from any country in which the Secretary of Agriculture has determined that foot-and-mouth disease or rinderpest exists.

- (d) The Act of March 4, 1907 (21 U.S.C. 80-82).

Requires inspection of all ruminants and swine intended for exportation, to determine their freedom from disease and that no clearance shall be given for any transporting vessel unless the animals are certified as being healthy.

- (e) The Act of March 3, 1891 (46 U.S.C. 466 a, b).

Authorizes regulations prescribing accommodations for export animals aboard transporting vessels.

IMPORTATION OF ANIMALS AND POULTRY

Regulations relating to the importation of animals and poultry are contained in Parts 92 and 94 of Title 9, Code of Federal Regulations.

Animals and poultry, which each year are brought to the United States from many foreign countries, can bring with them diseases which presently do not exist in this country - foot-and-mouth disease, rinderpest, dourine, glanders, fowl plague, and many others. They can also harbor diseases already established, such as brucellosis, hog cholera, scrapie and Newcastle disease. Thus, international inspection and quarantine efforts are directed not only against the so-called exotic diseases but also against those we are endeavoring to control or eradicate.

The Act of June 17, 1930 (19 U.S.C. 1306) requires the Secretary of Agriculture to determine the existence of foot-and-mouth disease and rinderpest in all foreign countries. When he has determined that either of these diseases exists in a country he gives public notice thereof and until such time as he in like manner determines that the diseases no longer exist in a country, the importation of cattle, sheep, other ruminants or swine is prohibited.

To carry out the provisions of this statute, the Animal Inspection and Quarantine Division maintains on a current basis a list of foot-and-mouth disease or rinderpest infected countries (9 CFR 94.1). Presently, either or both of these diseases are considered

to exist in all countries where the raising of livestock is significant except Canada, Mexico, the countries of Central America, the Republic of Ireland, Northern Ireland, Norway, Australia and New Zealand.

Semen from ruminants and swine in countries where foot-and-mouth disease or rinderpest exists is also prohibited entry. Studies have shown that the virus of foot-and-mouth disease may be present in the semen of bulls infected with the disease. Unfortunately, we do not have as yet procedures and techniques which would render semen safe from the hazard of foot-and-mouth disease should any be present at the time of collection. The deep freeze technique now commonly used in the storage and transportation of semen would actually preserve the virus. Thus, for purposes of administering applicable laws and regulations, we must consider semen in the same category as the donor animal.

For ruminants and swine intended for importation from all countries (except from Canada and the seven northern Mexican states), the importer must first obtain a permit from the Animal Inspection and Quarantine Division. Permits are also required for poultry from all countries except Canada. They are not required for horses and other equine stock from any country.

The purpose of permits is not for mere recording of intended importations, but to more effectively administer those provisions of the law which relate to exposure to disease in the country of origin. Thus, such factors as the prevalence of diseases, veterinary services and quarantine practices in the country of origin are considered in the issuance of permits. They also permit the Division to specify conditions under which importations may be made.

With few exceptions import animals and poultry must be accompanied by certificates of health when offered for entry. These are issued by official veterinarians in the country of origin and certify as to freedom from communicable diseases and exposure thereto during the 60 days immediately preceding shipment. Such certifications are not acceptable for cattle from countries where contagious pleuropneumonia exists, thus precluding the entry of cattle into the United States from such countries.

Certificates alone are not adequate assurance against the introduction of diseases. In the first place, the incubation period of a disease may allow a potentially dangerous "carrier" animal showing no evidence of disease to be shipped from a foreign country. Secondly, certificates may be in error because of inadequate knowledge on the part of the issuing

veterinarian as to local disease conditions. There may also be indifference in the issuance of certificates, which is not confined to regulatory officials in foreign countries.

To provide for the orderly importation of animals and poultry, the principal coastal cities and various points along our international land borders have been designated as ports of entry. At some of these ports the Division maintains resident veterinarians while at others, veterinary inspection service is provided on an appointment basis.

Health inspection of import animals and poultry is mandatory by law. When offered for entry, careful physical examination is made and accompanying documents and test charts are checked. Animals not meeting the requirements upon initial inspection are refused entry and either sent back or destroyed. Those potentially eligible for entry may be held for quarantine, or other detention, pending results of tests for such diseases as brucellosis, tuberculosis, dourine and glanders.

The Department owns and operates a quarantine station at Clifton, New Jersey for animals and poultry entering through the port of New York. When importations are made at other ports, the importer must provide quarantine facilities, subject always to the approval of the port veterinarian.

Quarantine of import animals and poultry, usually from 21 to 30 days or longer, is considered extremely important in safeguarding the livestock of the United States. Adequate quarantine has taken on added significance with the increased use of air transportation. Travel time from a foreign country may run ahead of the incubation period of some diseases. This did happen recently when several shipments of game birds, apparently healthy when loaded aboard the transporting aircraft, developed symptoms of Newcastle disease after a few days in quarantine. The strain isolated proved to be a highly lethal type.

Importations from Canada and Mexico are in certain respects handled differently than those from other foreign countries. This is possible because of rather close working relationships with these neighboring countries. For example, permits are not required for importations from Canada, nor for some importations originating in Mexico. There is no quarantine of animals or poultry from Canada or for ruminants and swine from the seven northern Mexican states. There is, however, authority for such quarantine which can be used when considered necessary. All animals from Mexico are given precautionary dipping against fever ticks or scabies mites.

IMPORTATION OF MEATS AND ANIMAL BYPRODUCTS

Earlier it has been mentioned that domestic ruminants and swine are prohibited entry from foot-and-mouth disease or rinderpest infected countries. The same statute (19 U.S.C. 1306) also prohibits the importation of fresh, chilled, or frozen beef, veal, mutton, lamb or pork from such countries.

Canned meats from countries where foot-and-mouth disease or rinderpest exists, when completely sterilized by heat in hermetically sealed containers, are permitted unrestricted entry. Cooked meats from such countries can come in but only when consigned from the port of entry under seal to establishments operating under our federal meat inspection system for further processing, by heat, under supervision.

Each year thousands of tons of animal byproducts, such as glands, livers, dried blood, hides, wool, and bones, are imported for pharmaceutical or industrial uses. Such products are potentially dangerous from the disease introduction standpoint. All such products are inspected at ports of entry and released without restrictions when this can be safely done; otherwise, the byproducts are sent under seal to approved industrial establishments for handling and processing in a manner designed to preclude spread of disease.

Most handling of restricted byproducts is directed against the introduction of foot-and-mouth disease and rinderpest. In the case of bones and bone meal, additional precautions are taken against the introduction and spread of anthrax.

EXPORTATION OF LIVESTOCK

The purpose of regulatory control over export livestock is to foster and maintain a healthy foreign trade by assuring that only healthy animals are sent to foreign countries. It is also necessary that export livestock be shipped in a manner which will assure their arrival in foreign countries in good condition. Thus, there are health regulations to be complied with and requirements aboard transporting vessels and aircraft as to space, ventilation, feed, water and attendants. Such regulations are set forth in Part 91, Title 9, Code of Federal Regulations.

The health requirements are those of this country. In addition, there may be requirements of the receiving country, such as additional tests and vaccinations. It is Division policy to see that such added requirements are met insofar as it is possible to do so.

Veterinary inspection is required for all animals intended for export, at the point of origin. This is done by accredited veterinarians who also conduct tuberculosis tests, when required, and collect blood samples for necessary brucellosis tests. Such tests must be made within 30 days of the date of shipment from the farm to the port of export.

All test charts and health certificates issued by accredited veterinarians must be endorsed by the Federal Veterinarian in Charge of the Department's disease control activities in the State of origin. This is because he may have knowledge of quarantines and disease conditions in certain areas which would preclude exportation of the livestock.

At the port of export the animals are reinspected by the port veterinarian, the animals identified as those covered by the health certificates, and the shipping accommodations approved. If everything is in order the port veterinarian issues his export certificate upon which Customs releases the shipment.

The matter of certifying livestock for export has served well in the expansion of our foreign trade. The need for careful attention to all details in connection with such certifications cannot be overemphasized. Foreign governments have come to depend upon such certificates and the integrity of our enforcement of regulations to provide them with healthy animals in good condition. It would be unfortunate if anything were done to cause them to lose such confidence.

BIOLOGICAL PRODUCTS SECTION

The activities relating to the production and marketing of veterinary biologics are located in the Biological Products Licensing Section and the Biological Products Inspection Section of the Animal Inspection and Quarantine Division. The Division administers the Virus-Serum-Toxin Act of March 4, 1913, which provides that no virus, serum, toxin, or analogous products shall be produced and marketed interstate unless produced under a U. S. Veterinary License. No veterinary biological product can be imported into the United States without a U. S. Veterinary Permit issued by the Secretary. No virus, serum, toxin, or analogous products shall be marketed which are worthless, contaminated, dangerous, or harmful. Conversely, these products must have merit and serve the purpose for which they are intended.

The Secretary of Agriculture, under the law, is authorized to promulgate rules and regulations. The regulations pertaining to the licensing and inspection of veterinary biologics are set forth in

the CFR Title 9, Parts 101 to 123. The rules and regulations go into considerable detail for the production and inspection of anti-hog-cholera serum and hog-cholera virus. These two products are produced according to procedures prescribed in the Regulations. The regulations are in less detail for all biologics other than hog-cholera serum and virus. These products, such as bacterial vaccines, viral vaccines, antisera, diagnostic agents, and the like are usually a result of the research conducted by the individual firms applying for license to market the products. They are produced according to the manufacturer's methods of production which must be acceptable to the Division.

Certain information is required of biologics' manufacturers for Division consideration and decisions in licensing matters. This information includes:

1. An application for license to the Secretary of Agriculture. This application must list the name and address of the company, including the names of its officers, the name of the product for which the application is made, and additional information of a similar nature. The application must be signed by an authorized officer of the firm and, in so doing, the organization agrees to abide by the regulations administered under the Act.

2. Triplicate copies of blueprints and plot plans of the premises showing the location of all the buildings thereon and the nature and use of adjoining properties. The blueprints must be complete to furnish the floor plans of all laboratory rooms. A legend must be attached to the blueprints which lists the main production equipment and where located, the products produced in each room, materials used in construction, plumbing, drainage systems, and the like.

3. Methods of production and testing. This information must be supplied in outline form setting forth all detailed procedures of production and testing. An outline guide is furnished by the Division to make certain that all such information is supplied. This would include such items as:

- (a) The source and strains of bacteria or virus used for production purposes.
- (b) The composition of media for propagating bacteria and viruses, including chick-embryos and tissue culture.
- (c) The method of handling and storing bacteria and viruses used for production purposes.

- (d) Technique of inoculating production media and animals.
- (e) Period of incubation and the temperature to which inoculated cultures are subjected.
- (f) Technique of harvesting the organisms or product materials for further processing.
- (g) The chemicals added and the concentration used for inactivation and preservation. In the case of modified live or attenuated preparations, the methods of modification or attenuation.
- (h) Methods of batching and filling final containers.
- (i) In the case of desiccated products, a description of the drying process and vacuum sealing, along with a proposed procedure for moisture determination. All desiccated products should be subjected to desiccation until moisture has been removed to a satisfactory degree.
- (j) A proposed expiration date, dosage and recommendations for use.

4. Copies of labels and package literature. Labels are reviewed to determine that all required statements are shown thereon, such as the true name of the product, contents in liquid, solid or potency measurement, dosage and directions, serial number, expiration date, License No., name and address of the firm, a caution statement to destroy the container and unused contents in the case of viable preparations, storage at 45° F., and that unused contents should not be held for later use. If other information is shown on the label and package circular, it must not be false or misleading in any particular. Claims made for a product must be substantiated by appropriate supporting data.

5. Data covering research conducted by the manufacturer to demonstrate the safety and potency of a biologic. This includes safety, potency, purity, and sterility tests conducted by the manufacturer under controlled laboratory conditions. The data, depending on the biologic involved, must also include the results of experimental field evaluation.

In addition and depending on the circumstances involved, the Division may request samples of the biologic for Division testing; at other times, the Division may prescribe certain tests designed to further evaluate the safety and potency of the product which

the manufacturer must conduct before final decisions in licensing are reached. In many unquestionable cases, tests conducted by the manufacturer are carried out under the observation of Division field veterinarians, whose report accompanies the test results and application for license submitted.

The Licensing Section approves and develops production and testing standards. Production standards are enforced at the time manufacturers submit their outline of production for Division approval. If any phase of production is not in conformity with standardized procedures previously found acceptable and already documented by supporting evidence, the manufacturer is so notified and the procedure changed. Minimum testing standards for a number of biologics are available in printed form for ready distribution, while for other products, certain testing procedures have been found acceptable but are not in printed form as Standards. In the latter case, the acceptable testing procedures are furnished to licensed manufacturers and others on request or they may be imposed on the manufacturer if their proposed testing procedures do not meet or exceed those which we regard as acceptable. Testing standards are essential to assure the livestock raiser that the licensed biologics, which they purchase, are safe and meet or exceed established levels of potency. The development of testing standards and the improvement of those already in existence will be an integral part of the activities at the National Animal Disease Laboratory.

The Animal Inspection and Quarantine Division also has the responsibility of safeguarding the nation's livestock and poultry by regulating the importation and interstate movement of animal disease organisms and vectors. This activity is part of biologics' control work because of the close relationship which exists in the two areas of operation. Determining the safety and possible hazards involved in manufacturing biologics from animal disease producing agents and the same of similar agents imported for research purposes is closely associated. U. S. Veterinary Licenses are issued for biological products and U. S. Veterinary Permits are issued for the importation and interstate movement of organisms and vectors.

No animal disease producing organism or vector can be imported into the United States without prior approval from the Department in the form of a U. S. Veterinary Permit issued by the Secretary of Agriculture. Animal disease producing organisms and vectors, once permitted entry into the United States, to a specified person, cannot be further transported or given to other persons without prior approval from the Division. In addition, permits are required in advance for the interstate movement between research workers, educational institutions, biological laboratories, and others studying animal diseases of certain disease producing agents, regardless of how such agents came to exist in this country. This includes such disease producing agents as Venezuelan equine encephalomyelitis virus; Asiatic or highly virulent strains of Newcastle disease virus; Plasmodium berghei; Bluetongue; Scrapie;

and others which are of an unusual or contagious nature. A notice to this effect has been distributed by the Division, and it is included in the ADE Division Manual and Directory of Animal Diagnostic laboratories in the United States.

FEDERAL MEAT INSPECTION AS RELATED TO ADE AND PREVENTIVE PROGRAM ACTIVITIES

The Federal Meat Inspection organization consists of over 3,300 meat inspectors and veterinarians. These are located in over 565 cities and towns throughout the country and conduct inspection in approximately 1,400 slaughtering and/or processing establishments. The inspector in charge of each station, of which there are about 120, has been delegated full responsibility to carry out the provisions of the Meat Inspection Regulations in the area under his supervision. He receives general supervision including periodic surveys of establishments by one of four assistant directors from the Office of the Director of the Meat Inspection Division.

The Washington organization of the Meat Inspection Division consists of the Office of the Director and 11 staff offices, each having responsibility for a certain part of the total meat inspection program. These staff offices are Animal Foods, Facilities, Procedures and Training, Labels and Standards of Identity, Military Servicing, Special Projects and Federal-States Relations, Program Appraisal, Humane Slaughter, Residues in Food Animals, Chemical Control and Biological Control. There are four assistant directors in the office of the Director who although their headquarters are in Washington operate from an office which is located within the area for which they have responsibility. These areas correspond generally to the Regional Business office areas established by ARS. However, Michigan and Indiana are in the Northern Area and Kansas and Missouri are in the Southern Area.

Federal meat inspection is authorized by the Meat Inspection Act, and has been in operation for over 50 years. The Meat Inspection Act authorizes the Secretary of Agriculture to issue such regulations as are necessary to carry out the provisions of the Act. Briefly, these provisions are designed to assure wholesomeness of meat and meat products which are used for human food and to assure that such products are unadulterated and truthfully labeled when distributed from inspected establishments. The Act provides jurisdiction over meat and meat food products moved in interstate or foreign commerce and when an establishment obtains Federal meat inspection, the inspection service covers all products produced by the plant regardless of whether they are distributed interstate or exported.

The administration of the Humane Slaughter law was assigned to the Meat Inspection Division. It becomes fully effective July 1, 1960. After that date Federal purchases of meat products may be made only from companies using humane methods in all their plants.

There is nothing in the Meat Inspection Act, Import Meat Act, and Horse Meat Inspection Act which provides for the control of animal

diseases that may be present in domestic food animals. For many years veterinary meat inspectors have, however, furnished assistance to those engaged in animal disease eradication control activities in a great many ways. While in some cases there was not a realization on the part of meat inspectors or ADE control officials that the meat inspection employee was not conducting ADE activities under the authority of the Meat Inspection Act, this seems to now be better understood by all concerned.

Probably the most important way in which veterinary meat inspectors aid animal disease control programs is by removing sources of infection as animals are brought to slaughter.

The control over condemned product in federally inspected establishments and the high standard of sanitation maintained in these plants results in infectious material being handled in such a manner that it no longer constitutes a threat to human health. Some plants do not have rendering facilities and the condemned products are taken to other plants for rendering after being denatured. Control over the transportation and heating of such products is the responsibility of State or Federal animal disease control officials.

Veterinary meat inspectors frequently report disease conditions which are found on ante-mortem or post-mortem inspection giving sufficient information so that the disease control officials can locate the origin of the diseased animal and take appropriate control action. Veterinary meat inspectors also provide services such as supervising the cleaning and disinfecting of trucks which have been used to haul animals infected with an infectious disease. In performing this service it should be clearly understood that meat inspectors are acting under delegated authority from the ADE Division.

Reports made by veterinarians engaged in Federal meat inspection provide highly accurate information on the health of animals in this country. Over seven per cent of animals coming to slaughter are found to be affected with a disease or condition that requires at least partial condemnation. Since these Federal veterinarians examine over 100 million animals a year or 80% of all commercial slaughter such information is of great importance in planning animal disease control programs.

POLICY: ITS PURPOSE, DEVELOPMENT, AND ACCEPTANCE

by Frank H. Spencer, Executive Assistant Administrator, ARS

I should like to preface my remarks by congratulating this group on the forward looking program which it is developing in the special preparation of staff members for positions of responsibility in its control and eradication program. The problem of providing competent leaders and supervisors is a hard one and one which will not solve itself. It is only as we plan intelligently to train and maintain a competent reservoir of staff members for assignments of this kind that we can count on a continuing high level of public service. Therefore, I am particularly glad to have a part in this session from which we all hope important results will flow.

Let me say in the beginning of this discussion of policy that nothing I present will be very original. Policy has been discussed for many years by people much more competent than I to develop all its implications. I confess freely that I have borrowed very broadly from what others have had to say on this subject, simply supplementing material from my own experience.

As a starting point we should perhaps define policy not from the dictionary standpoint but from the standpoint of finding out what it really means in practical application. There are almost as many concepts as there are textbooks in management. I have selected two which seem to me fundamental. Here they are:

(1) "Policy sets out guiding principles to govern actions to insure consistency under repetitive conditions"; (2) "Policy is a statement of what is to be done. Administration is charged with the interpretation and execution of a policy. Procedure defines who does it, how it is done and when." The first of these definitions seems to me to be an excellent statement of the overall nature of policy; the second is a good working definition and also a safeguard against confusing policy with administration and procedure. Policy is broader than procedure. A well-known maxim is "Honesty is the best policy." Within this policy one should not loot the cash drawer, but refraining from dipping into the till is a practice and not a policy.

In its very nature, policy has two characteristics which may seem contradictory. First, policy can never be static or rigid. If it is, it will fail to fit into the conditions of operating necessity and will soon become outmoded. Second, it cannot be a constantly changing thing. While it must be responsive to the realities of an operating program it cannot shift with every change in conditions, but must without changing its basic character be adaptable in charting the course necessary to the attainment of purpose. To use an example, policy is more like a growing plant than a fixed landmark. Its germ can never change to a new species, but to

follow the simile, its size, color, and productivity will depend greatly upon climate, environment, and other factors. These factors occur not only in nature but in the operation of a program.

Policy of course has an origin. Who originates it? In Government, which is the field of our principal concern, the original origin, if we may use such a term, is Congress which by the enactment of legislation fixes the policy for the various areas of Government operation. Policy is further originated by the President through the issuance of Executive Orders and other declarations, heads of the various Departments of Government through orders and other documents, and further down the line, by program administrators through their orders and rulings. Two other groups are of course in the background of policy origin. The first of these is the great body of United States citizens who by their votes and other expressions of public opinion have a large voice in determining the policy which shall be adopted in the functioning of Government. The second is the courts which by legal decision frequently fix the framework within which Government agencies shall operate.

The development of policy of course does not stop with its origin. We must consider such questions as who determines particular stated policies. How do these "determiners" decide on the policy to be adopted, or on changes in it? How is policy expressed and used? And what is its relation to program administration and procedures? In all these questions we shall have to think about not only the determination of policy but also its application and acceptance. It is not possible to consider these fields as entirely separate and, therefore, our discussion will deal with various aspects without attempting in all cases to make a sharp breakdown between determination and acceptance.

Broadly speaking the one responsible for determining a stated policy is the top administrator. However, he is not altogether a free agent in this function. First, the policy which he determines must be within the legal framework of his agency and of the program which he is administering. Second, he must allow sufficient latitude for the adaptation of his policy to the program by operators all up and down the line of administration. This implies both efficient communication and a reasonable degree of flexibility.

In the actual task of determining a policy the administrator must think specifically of a number of things. We have already said that his policy must be within the proper legal framework. To make sure of this the administrator must of course be thoroughly familiar with the text of the law under which he is operating. But this is not enough. He must also study what we call the "legislative history" of the act. It may well be that the text of the law is silent on some particular point but that either

in the Congressional Committee reports on the bill or during debate in either House of Congress some statement was made as to the intent of the legislation which will be binding on the agency administering it. Another important factor for the administrator's consideration is the experience of responsible staff members. He should freely avail himself of this experience in the determination of his policies. However, once all the information is in hand the final decision is up to the administrator himself. He cannot simply count the votes and follow the majority opinion.

Policies, once they have been adopted, are frequently open to revision. Such revisions usually are not revolutionary but are nonetheless important. It is essential to keep the lines of communication open -- up and down -- to determine when a policy does need changing. Sometimes the man at the top is actually the last one to know when this time arrives. The people close to operations are in a position to determine just how effective a policy is in its actual working and unless they are permitted and, in fact, encouraged to give their observations, much time and effort can be wasted before changes are made which although minor in themselves have important overall results.

It should go without saying that no policy can be effective unless it is well expressed. It is fundamental that this expression should be in writing and that all policy directives should be clear, concise, and simple. We have all seen classic examples of how policy statements should not be written. However understandable a policy statement may be to the man who drafts it, it is not going to be worth much unless it can be clear to the operating staff which is going to have to apply it.

Indispensable as is a good written policy statement, something more is needed. Written statements should be supplemented with discussions at various levels in the operating line. It is the responsibility of supervision to see that all persons concerned with policy operation have a clear understanding of what the policy is and how it affects their work.

If a policy is worth setting up it follows that it must be used by all members of an organization. Undoubtedly some will be more concerned than others but if policies are confined as they should be to really important areas, there is no member of the staff who will not come in contact with policy. All staff members have an interest and a responsibility in this area. It is of course a temptation for any man to ignore a policy with which he does not agree, but such a course cannot be justified. It is unfair to the organization and to the dissenter himself. If any member of an

organization considers a policy unwise or unworkable, certainly he should recommend that it be changed but unless and until his suggestion is adopted it is his responsibility to do his best to carry out the current policy.

Policy has a most important relationship to operating programs and to the whole process of administration and procedure. It is the broad framework within which programs are conducted and program objectives must be in line with policy. It is thus especially important that program operators have a clear understanding of policy and that those who determine policy have an equally clear understanding of the operating needs and limitations of their programs. Unless there is this mutual understanding there are sure to be operating errors, a considerable degree of individual frustration and sagging organization morale.

It is particularly important that an organization avoid becoming mechanical in its fixing and observance of policy. Both the quality of production and the morale of the staff is pretty sure to suffer when this happens.

No matter how well the policy may be conceived and how clearly it may be stated, it will fail in operation unless it meets with the acceptance of both the working staff and that segment of the public which is affected by an organization's operation. Probably the most important single element in securing acceptance of policy is that the policy must commend itself to reason. This means that it must be fundamentally sound and that it must consider the rights and interests of all parties to a situation. Probably most regulatory laws will never be popular but their effective enforcement is dependent on enforcement policies being impartial and considerate of the interests of the party being regulated rather than being based merely on an arbitrary exercise of the power conferred by law. This element of reasonableness covers a multitude of sins. If a policy has this great merit it can sometimes stand a surprising amount of technical flaws.

Internally a policy has a much better chance of acceptance if in addition to being reasonable it appeals to the creative abilities of staff members. A policy which simply contemplates cold efficiency often fails to do this. If the worker feels that under the policy of his organization he can not only advance but also grow in knowledge and usefulness, he can usually be counted upon to be an enthusiastic supporter of agency policy. If on the other hand, he feels that he is hemmed in by restrictive policies his performance will tend at best to be perfunctory. Nothing contributes more to policy acceptance than the feeling of the staff that it has a part in policy formulation. As has been said before, no one can relieve top administration

of its responsibility in this field, but top administration can make its task easier and also promote policy acceptance by seeking the views of employees at all levels and by using them whenever possible.

I know that all I have done is to sketch in quite broadly some very general aspects of the field of policy. Much of this material I think is fundamental and is essential to an understanding and appreciation of the problems you will encounter. I think, however, that what I have said should actually be the least important part of our discussion and that the questions which you may raise and the opinions which you may develop will be the most helpful part of our study. I know of no better time than the present for me to stop talking and let your discussion get under way.

FUNCTIONS AND RESPONSIBILITIES
OF
ADMINISTRATIVE SERVICES DIVISION

Major functions include:

1. A complete procurement management program including extensive purchasing and contracting operations for research investigations, supplies, materials, property, equipment, services and construction work.
2. A comprehensive real property management responsibility, including the acquisition, disposition, utilization, maintenance control and accountability of real property and the engineering and design functions for an extensive construction program.
3. A complete personal property management program including the utilization, maintenance, repair, replacement, accountability, control and disposition of personal property; acquisition of personal property from excess and surplus sources; and the management of motor vehicles.
4. The records, forms and reports management, procedures services and communications programs.
5. A comprehensive management program relating to research contracts, research and regulatory cooperative arrangements, patents arising therefrom, and licenses to practice under Department controlled patents.

The Director and his assistant are responsible for development of overall policy and procedures in the administrative services field and supervising the conduct of operations carried out in the following branches:

Procurement Branch

This branch consists of two sections:

Supply and Purchasing Section
Contracting Section

Supply and Purchasing Section

1. Provides guidance and leadership in connection with purchasing operations at the RBOs; and initiates policies and procedures governing purchasing operations in ARS.

2. Requisitions or purchases material, property and services for Washington and certain field offices. Arranges for shipping personal effects of employees to and from foreign countries.
3. Secures printing and binding and arranges for the procurement of books, periodicals, maps and newspaper subscriptions; grants emergency printing and authority to field offices.
4. Obtains photostating, blueprinting, multilithing, mimeographing, and other types of reproduction services; distributes or arranges for the distribution of instructions, orders, interpretations, regulations, directives, and other material, as ordered by the requisitioner.
5. Inspects procurement methods to assure compliance with policies and standards including determination that proper authorities are delegated.
6. Provides technical assistance to Washington, Regional Business and other ARS offices on procedures relating to functions of the Branch.
7. Determines restrictions necessary on purchases and recommends approval of purchases of restricted items.
8. Provides or obtains interpretation of laws, regulations and decisions relating to the above activities and arranges for dissemination of such information to the RBOs and program divisions.

Contracting Section

1. Provides guidance and leadership in connection with contractual operations at the RBOs; and initiates policies and procedures governing contractual operations in ARS.
2. Inspects procurement methods to assure compliance with policies and standards including determination that proper authorities are delegated.
3. Develops specifications and invitations for bids for the procurement of equipment, supplies and services not available from established contract sources and for the sale of excess property; abstracts and analyzes all bids received; either makes final acceptance or recommends bids to the Office of Plant and Operations for acceptance when necessary. Directs the preparation of all contracts issued by the Section; and directs the preparation of specifications covering a wide variety of technical, scientific and motorized equipment.

4. Develops and effects contracts incident to the acquisition and disposition of equipment and supplies; arranges for other non-personal contractual services; reviews and recommends award of service contracts when amounts exceed delegated field authority.
5. Provides technical assistance to Washington, Regional Business and other ARS offices on procedures relating to functions of the Branch.
6. Provides or obtains interpretation of laws, regulations and decisions relating to the above activities and arranges for dissemination of such information to the RBOs and program divisions.

Real Property Branch

This branch consists of three sections:

Acquisition and Disposition Section
Engineering, Design and Construction Section
Utilization and Maintenance Section

Acquisition and Disposition Section

1. Conducts surveys and makes recommendations for the acquisition by purchase or transfer of real property necessary to meet ARS needs.
2. Conducts a leasing program, including review of leasing actions taken by RBOs, and furnishes technical assistance and guidance to RBOs in space matters. Acquires by assignment space under the control of the General Services Administration and initiates request for space in Federal and other buildings. Conducts surveys and prepares estimates of space requirements in new Federal Buildings.
3. Conducts systematic surveys to determine real property needs and recommends disposition of property excess to ARS requirements, disposes of surplus real property under delegated authority.
4. Develops and prepares revocable permits covering use of ARS controlled land, buildings and other facilities and equipment, reviews requests for oil and gas leases and for right-of-way easements across lands of the Government and makes recommendations pertaining thereto.

Engineering, Design and Construction Section

1. Provides engineering guidance and assistance to ARS officials in planning and developing current and long range housing and related facility and real property requirements of ARS.

2. Develops architectural plans, specifications, and cost estimates for the construction, alteration and rehabilitation of ARS facilities.
3. Conducts investigations to establish needs for construction, alteration or repair, recommends necessary action, and provides for technical supervision in the design and construction of new facilities.

Utilization and Maintenance Section

1. Strives for optimum utilization of ARS real property and facilities through systematic inspections by Section and RBO personnel. Reports findings to higher authority and recommends appropriate action.
2. Directs periodic surveys of ARS Quarters for the purpose of establishing fair rental rates.
3. Develops maintenance standards and schedules designed to prevent the deterioration of ARS real property. Maintains close liaison with operating officials, RBOs and directs and conducts inspections to insure compliance with established standards.
4. Conducts studies and develops standards for effective heating, lighting, ventilation, air conditioning, accoustical treatment, electrical convenience outlets, etc.
5. Directs the installation and operation of a uniform real property accountability record system.
6. Within the Washington area arranges office and equipment moves; initiates requests for alteration, repair and maintenance of space; and arranges for facilities and services such as telephone installation and directories, identification cards, building passes and parking permits.
7. Provides technical assistance to Washington, RBOs and other ARS offices on Section procedures relating to functions of the Branch.

Personal Property Branch

This branch consists of two sections:

Mechanized Equipment Section
Property Control Section

Mechanized Equipment Section

1. Develops and conducts an effective management and utilization program on motor vehicles and heavy mechanized equipment for ARS.
2. Initiates and conducts studies for determination of need, including types, sizes and use of automotive, and miscellaneous light and heavy equipment, including aircraft; acquires and disposes of motor vehicles and aircraft.
3. Prepares equipment cost estimates and justifications for use in budgetary submissions, and allocates passenger carrying vehicles based on budget estimates.
4. Develops motor vehicle and heavy mechanized equipment management and operation procedures. Plans and conducts utilization surveys. Coordinates vehicle management activities of the RBOs.
5. Analyzes periodic vehicle operation reports on all ARS vehicles to determine effectiveness of utilization and disposal or reassignment of vehicles. Develops and supervises the establishment and maintenance of an effective motor vehicle record system.
6. Acts as liaison between Department and ARS in connection with motor pool studies conducted by GSA; acts as liaison between GSA motor pool officials and ARS in obtaining transportation for Washington area personnel, both locally and in field travel status. Is responsible for the efficient functioning of the Beltsville Motor Pool System. Reviews and analyzes motor vehicle accident reports, recommends disposition of cases and collaborates in settlement of claims. Reviews and analyzes requests for authority to park Government-owned motor vehicles at private residences and makes recommendations for approval or disapproval.

Property Control Section

1. Recommends over-all ARS policies, plans and programs for the establishment and maintenance of an effective ARS personal property management system.
2. Develops and issues procedures governing the acquisition use standards, utilization and disposition of personal property, including the establishment of a uniform inventory and accountability system.

3. Exercises technical direction and coordination of personal property activities of the RBOs and other units of ARS.
4. Maintains accountability and control records for property in areas served by the Washington office and directs taking of annual property inventories, directs disposition of property in these areas and processes all property documents for property acquired, reassigned or disposed of.
5. Assists program divisions on inventory problems and other property matters including the acquisition of property from excess sources; conducts periodic property utilization surveys of Washington and Beltsville offices.
6. Develops over-all ARS policies and procedures governing the acquisition, utilization, disposition, and accountability control of agency books. Maintains card records of agency books assigned to locations served by the Washington office.
7. Furnishes the Beltsville and Washington Finance Offices property data for use in maintenance of the General Ledger Accounts and assists in reconciliation of the property records with the General Ledger Accounts.
8. Reviews claims for damage to private property submitted under the Tort Claims Act and collaborates in settlement; acts as liaison with the office of General Counsel in such matters.

Records Management Branch

Office of the Branch Chief

1. Directs an agency-wide reports management program based on established agency and Departmental requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops and maintains control over reports and provides for the review, analysis, modification and creation of reports.
3. Furnishes technical assistance and guidance in reports management. Collaborates in determining agency needs and in coordinating reports management activities throughout ARS.

This Branch consists of the four following sections:

Records Systems Section
Directives Management Section
Forms Management Section
Service Operations Section

The functions of these Sections are:

Records Systems Section

1. Directs an agency-wide records management program based on established agency and Departmental requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops records disposal schedules and other control techniques and provides for the review, analysis, modification and creation of records maintenance and disposition systems.
3. Furnishes technical assistance and guidance in records management. Collaborates in determining agency needs and in coordinating records management activities throughout ARS.

Forms Management Section

1. Directs an agency-wide forms management program based on established agency and Departmental requirements. Conducts continuing surveys of the program and makes recommendations for its improvement.
2. Develops and maintains control over forms and provides for the review, analysis, modification and creation of all agency forms and form letters.
3. Furnishes technical assistance and guidance in forms management. Collaborates in determining agency needs and in coordinating forms management activities throughout ARS.

Service Operations Section

1. Supervises an agency-wide communications system based on established agency and Departmental requirements. Conducts continuing surveys of the system and related services and makes recommendations for improvement.
2. Develops and establishes controls over communications, maintains central files including stocks of current AM's and TC's, provides messenger and other services to Washington offices.
3. Compiles reports on records holdings (annual), postage and fees paid mail (quarterly and annual), indispensable records (semi-annual) and other reports required of the Branch.
4. Furnishes technical assistance and guidance in communications management. Collaborates in determining agency needs

and in coordinating communications management activities throughout ARS.

Directives Management Section

1. Directs agency-wide system for the issuance of agency policies, authorities and operating procedures. Conducts continuing surveys of the system and related services and makes recommendations for improvement.
2. Develops and maintains control over the issuance of all administrative instructions. Develops procedures for certain administrative operations upon request or when operations are not the primary responsibility of a single office. Reviews and provides clearance service for all material for publication in the Federal Register.
3. Furnishes technical assistance and guidance in procedures management. Collaborates in determining agency needs and in coordinating procedures management activities throughout ARS.

Research Agreements and Patents Branch

This Branch is not organized into Sections. It:

1. Develops and prescribes procedures to be followed in the negotiation, drafting, and processing of Research and Marketing Act contracts, cooperative agreements and Memoranda of Understanding and assists in the accomplishment of the foregoing.
2. Reviews the foregoing instruments to verify that they and related documents are developed in accordance with existing law, regulation, and procedure and that the interests of the Government are fully protected.
3. Acts in an advisory capacity on problems that arise prior to, during, and after negotiations are completed and problems that arise during the course of the work and interprets data and information regarding regulations, laws, procedures, and policies applicable to research contracts, cooperative agreements and memoranda of understanding.
4. Develops procedures for the processing of applications for licenses to practice under Department controlled patents for ARS and all other USDA agencies.
5. Reviews applications for patent licenses, handles administrative work required to obtain licenses, prepares licenses, and maintains complete file of Department patents and licenses to practice thereunder.

6. Obtains clearances as may be necessary on instruments handled by the Branch from the Offices of the General Counsel, Budget and Finance, Plant and Operations, and others.

Resume of Functions and Responsibilities
Of
Budget and Finance Division

Major functions include:

1. Development and coordination of requests for funds to finance the Agricultural Research Service's activities.
2. Presentation of such requests and additional explanatory material to reviewing authorities in Department of Agriculture, Bureau of the Budget, and the Congress.
3. Execution of the budget as approved by passage of appropriation act, including allotting funds, maintaining necessary accounts and auditing transactions for compliance with numerous laws and regulations.
4. Reporting, in financial and narrative terms, on the status of funds and progress of operations, in the form of recurring reports and non-recurring reports in response to specific requests.

The Director and his assistant are responsible for development of overall policy in the budgetary and financial field and for directing the conduct of operations carried out by four branches as follows:

Budget Development Branch

The Budget Development Branch has four sections as follows:

Research Section
Regulatory Section
Reports Section
Administrative Section

This Branch is responsible for the following:

1. Arranges for annual submission to the Administrator by program divisions of their estimated fund requirements for the conduct of programs.
2. Reviews such material for submission to Administrator and assists in determinations of the amounts to be allowed and authorizations required.
3. After amounts have been determined by Administrator, prepares the necessary material for submission to progressively higher levels of review as listed below:
 - (a) U. S. Department of Agriculture
 - (b) Bureau of the Budget
 - (c) Congressional Appropriations Committees

4. Arranges for conduct of hearings and appearance of ARS program personnel at such hearings.
5. Arranges for correction of testimony given before Congressional Appropriations Committees.
6. Develops explanatory statements on the effects of Congressional action in the House and Senate on the appropriation request for ARS.
7. Prepares or reviews for accuracy and appropriateness all correspondence having budgetary implications relating to programs of ARS.
8. Obtains and analyzes material as necessary and develops special reports to respond to requests for budgetary information on ARS programs. Such reports are usually prepared at the request of members of Congress, Congressional committees, farm organizations, and others interested in the work programs of ARS.
9. Prepares a monthly summary report for the Office of the Secretary, primarily in narrative form, reflecting progress, including statements of selected recent accomplishments.
10. Through the use of rapid data processing equipment, maintains information on all regularly appointed personnel of ARS to reflect changes in salary liability and for use in preparation of monthly and periodical tabulations of such data to meet various requests for such information and to assist in preparation of the annual budget estimates.

Allotments and Control Branch

The Allotments and Control Branch has two sections as follows:

Allotments and Apportionments Section
Control Section

This Branch is responsible for the following:

1. Determines availability of funds for allotment to each ARS Division Director, and for transfers, advances, or reimbursements to other Government agencies, and based on such analysis prepares allotment documents to make funds available.
2. Makes necessary arrangements with other Government agencies for financing certain work of the Service by transfers, advances, reimbursements, or other special funds.

3. Administers the distribution to operating divisions of special funds, appropriation limitations, and other authorizations.
4. Maintains continuing review of allotments, apportionments, obligations, and expenditures to prevent deficiencies, establish reserves and transfer free balances to other operating divisions.
5. Furnishes to the Department and Bureau of the Budget financial plans for the fiscal year involving estimates of monthly, quarterly and annual rates of obligations, expenditures, and employment.
6. Justifies, as necessary, any deviations occurring from such estimates.
7. Prepares appropriate justifications for releases from budgetary reserves imposed by the Bureau of the Budget.
8. Prepares monthly reports for the Administrator, the Budget Bureau, and the Congress reflecting rates of use of funds, balances, and progress in achieving budgetary and financial plans.
9. Reports regularly on the status of any special limitations and authorizations.
10. Develops formulas and procedures for the proper assessment against program funds of administrative management and information expenses of the Service.
11. Develops all rates for reimbursable services under which collections of approximately \$10,000,000 are made each year.

Fiscal Management Branch

The Fiscal Management Branch has three sections as follows:

Accounting Systems Section
Fiscal Procedures Section
Technical Assistance Section

This Branch is responsible for the following:

1. Develops accounting systems, taking into consideration all necessary laws, regulations, principles and standards and the need for furnishing of reports to program divisions, the Administrator, the Department of Agriculture, Bureau of the Budget, Treasury Department, and Congress.
2. Prescribes and installs cost accounting systems, including that for the Working Capital Fund at the Agricultural Research Center.

3. Assist~~s~~ program divisions in the development of internal financial systems for the control of funds and for development of internal reports for the division concerned.
4. Issues regulations and procedural instructions covering the preparation of payrolls, including all necessary preliminary documentation such as time and attendance reports.
5. Issues regulations and procedural instructions for the examination of vouchers in ARS Finance Offices.
6. Consults with and provides assistance to program and administrative divisions of ARS on their financial problems, contractual functions and relationships and special funding operations.
7. Evaluates and recommends for approval ~~proposed~~ delegations of authority with respect to travel and station expense.
8. Gives assistance to ARS officials, research advisory committee members, experts, consultants and collaborators on their travel problems.
9. Advises and gives assistance to ARS employees in the making of complicated determinations concerning foreign travel.
10. Reviews reports of Internal Audit staff on the financial aspects of ARS programs.
11. Reviews reports of fiscal irregularities of ARS employees and makes recommendation as to fiscal liability to be assessed or other appropriate action to be taken.
12. Provides or obtains interpretations of laws, regulations, and decisions relating to all of the above activities, and arranges for dissemination of such information to all ARS personnel affected thereby.

Financial Operations Branch

The Financial Operations Branch has four sections as follows:

Coordination and Review Section
Fiscal Reports and Analysis Section
Washington Finance Office
Beltsville Finance Office

This Branch is responsible for the following:

1. Provides technical coordination over and reviews periodically the financial work performed in the Finance Sections of the four RBO's.

2. Maintains through accounting records over-all controls on all ARS funds and the apportionments, allotments, and administrative sub-divisions of such funds.
3. Analyzes, evaluates, and consolidates financial reports and statements from the six operating fiscal offices of ARS.
4. Handles nominations of certifying officers, bonding of employees, and financial aspects of various allowances for employees stationed abroad.
5. Through the Washington Finance Office carries out a complete administrative accounting and fiscal operation for all ARS activities in the Washington-Beltsville area, including the processing of payrolls and vouchers, maintenance of necessary accounting records and reporting on status of funds.
6. Through the Beltsville Finance Office carries out a complete fiscal and cost accounting operation for the Working Capital Fund (a business-type activity) covering reimbursable service operations of about \$3,000,000 annually for all activities of ARS and other Federal agencies at the Agricultural Research Center.

PERSONNEL DIVISION

- I Formulates, recommends, and implements overall policies, programs, plans, and standards of personnel administration within the framework of established policies and regulations of the Civil Service Commission, the Department, and other Federal agencies.
- II Provides technical and administrative direction and coordination in the execution of approved policies and programs and gives technical direction to personnel management activities of the Regional Business Offices and other units of ARS.
- III Directs the planning and execution of developmental activities as they relate to the ARS personnel management program.
- IV Collaborates with and advises the Administrator, his staff and other ARS officials in the formulation of major plans and policies to insure effective and progressive personnel management practices and procedures.

Classification and Compensation

- 1. Develops and recommends ARS policies and procedures on position classification, and wage and pay matters.
- 2. Classifies positions in ARS to their appropriate title and grade.
- 3. Conducts audits and reviews of positions to determine the accuracy of the position description and the grade and title of the position.
- 4. Participates with the Department Office of Personnel and Civil Service Commission in the development of position classification standards.
- 5. Reviews wage board jobs and assign to their appropriate title.
- 6. Consults with program officials on unusual pay problems such as, overtime pay, standby pay, night differential and holiday pay.

EMPLOYEE DEVELOPMENT AND SAFETY BRANCH

Develops and recommends policies, plans, and procedures governing employee development, safety, and injury compensation for ARS.

Employee Development

1. Develops and coordinates comprehensive training programs throughout ARS designed to improve the knowledges, skills, and abilities of professional, technical, administrative, and other groups of employees for more effective job performance.
2. Provides leadership in career development programs.
3. Works with and advises program personnel on training needs, programs, and methods.
4. Analyzes and solves complex training and personnel development problems to meet specific and general program operating requirements.
5. Coordinates fellowship and/or scholarship award programs involving training or education offered ARS personnel by Federal and non-Federal institutions.

Safety

1. Develops and coordinates a program for the protection and health of employees by the adoption of modern and adequate safety measures, procedures, and devices.
2. Provides training in accident prevention methods and in the understanding among employees and contractors of safe work practices.
3. Works with and advises program personnel on safety matters.

Employment and Placement Branch

1. Develops and recommends policies, plans, and procedures governing recruitment, employment, career service programs and related functions for ARS.
2. Develops and coordinates agency-wide recruitment programs and establishes and maintains continuing liaison with educational and research institutions and employment agencies as sources for recruitment of scientific, technical, and other personnel.
3. Develops, recommends, and interprets new and/or modified qualifications standards, examination announcements and rating schedules.

4. Develops and coordinates employment programs designed to anticipate need for and supply qualified personnel for the varied programs of ARS, in accordance with appropriate policy, regulations, and legal requirements; and placement programs designed to assure maximum utilization of ARS personnel.
5. Develops and administers a Career Service Program designed to provide opportunities for maximum use of employee abilities, experience, and skills, and for retention and career advancement.
6. Develops and provides legal documentation for all types of personnel actions and develops and executes systems for the compilation of personnel statistics and reports and for the maintenance of appropriate personnel records and files.
7. Furnishes technical counsel and advice on all aspects of employment and placement matters including recruitment, appointments, promotions, retirement, leave, hours of duty, reductions in force, etc.

Employee Relations Branch

1. Develop and recommend ARS policy on employee conduct and discipline; complaints, appeals and grievances; fitness for duty; suitability; relations with employee groups and unions; employee service and health benefits; outside work and political activity; performance evaluation; employee surveys; outside awards.
2. Counsel program officials on problems involving employee conduct, fitness for duty, performance, political activity and outside work.
3. Counsel employees on problems affecting their work or conduct.
4. Handle employee and outside appeals, complaints, and grievances.
5. Develop plans for evaluating employee performance. Gives general guidance to the administration of the ARS performance rating plan.
6. Review reports of alleged misconduct and request investigations.
7. Review investigation reports and recommend action.

Employee Incentives Staff

1. Develops and recommends policies and procedures for effecting an ARS incentive awards program.
2. Develops and promotes the incentives awards program, and processes the suggestion and performance awards.

DUTIES OF THE INFORMATION DIVISION, ARS

The Organic Act creating the Department of Agriculture in 1862 stated that the Department's duties should be "to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word..."

Within the Agricultural Research Service, this responsibility for "diffusing" information centers in the Information Division. The Division discharges its responsibility by establishing policies guiding the information activities of all personnel and by employing all the tools of communications--press, radio, TV, publications, motion pictures and others.

The Division is organized into three Branches: Current Information, Publications, and Program Services. Each Branch concerns itself with the development of specific informational products. The Division plans, administers, and coordinates these efforts so that the products of each Branch reinforce those of the others. The result is maximum impact--a concerted effort to gain public understanding of the research and regulatory activities of ARS.

CURRENT INFORMATION BRANCH

Agricultural Research Service information that makes "news" is handled by the Current Information Branch. Newspapers, magazines, radio, and television are major outlets utilized to keep the public abreast of new developments in research and regulatory services. A monthly magazine, Agricultural Research, is prepared and issued by this Branch to serve as a source of information for both mass media outlets, and for such agricultural leaders as Extension Service specialists, county agents, and vocational agriculture teachers.

PUBLICATIONS BRANCH

The Publications Branch produces technical and popular publications. The technical publications are a medium of communication between the Department's scientists and the scientists and specialists serving agriculture in other capacities, both here and abroad. Popular publications are directed toward broad segments of the agricultural and general public. They include not only the time-honored how-to-do-it farmers' bulletins, but also leaflets and home and garden bulletins useful to farmers, gardeners, and homemakers. The aim is to make these publications concise, direct, and completely readable. Technical publications are written largely by the scientists and edited by Branch personnel.

PROGRAM SERVICES BRANCH

The Program Services Branch is concerned with a variety of duties--visual planning, preparation of special reports, and coordination of information relating to regulatory programs.

Visuals are planned to supplement and enhance the production from other Branches--by illustrating publications, for example--and to carry information to the public in exhibits and motion pictures.

Special reports, concerned with both research and regulatory programs, provide specific source material, primarily for Extension specialists. They are geared to a fast-changing agriculture and provide agricultural leaders and specialists with background information designed to help them do a better job. In many cases, special reports represent the first publication on a subject in layman's language.

Regulatory programs--generally Federal-State campaigns directed toward the eradication or control of a dangerous agricultural pest or disease--are served by this Branch to gain public understanding and support. Of necessity, most campaigns bring the Agricultural Research Service into direct contact with the people who live and work where control measures must be taken and regulations enforced. The success of these campaigns depends upon the kind of cooperation that can be expected only from an informed public. Information specialists assigned to regulatory programs serve in the field as operations staff members. They produce information materials and also coordinate support from the entire Information Division.

OTHER DUTIES

In addition to these many Branch responsibilities, the Division provides direct service to the administrative staff of the Agricultural Research Service. This service includes planning and guidance in relation to the informational aspects of overall ARS programs, and the development of special informational materials to aid the administrator and his staff in explaining and supporting agency plans and policies before Congress and various public groups. By means of an ARS "suitcase exhibit", the story of ARS accomplishments in research and regulatory work is carried directly to farm groups, civic clubs, and other citizens' organizations throughout the country. On request, the Division develops specific informational material relating

to the Agricultural Research Service for the use of the Secretary of Agriculture, members of Congress, and other governmental leaders.

The Division is responsible for answering inquiries from the public. These average 300 a day. Many are answered by publications. Others are answered by specially prepared form letters. This work greatly reduces the correspondence load on the scientists and administrators of the Agricultural Research Service, and it forms a vital personal link between the agency and the American people.

THE REGIONAL BUSINESS OFFICES

There are many reasons why I have greatly appreciated your invitations the past several years to participate in these Conferences to discuss the relationship of the Regional Business Offices to the other units of ARS and to describe the functions and services performed by these offices. In addition to affording me an opportunity to become more familiar with your programs and their special needs and problems, attendance at these sessions has enabled me to become acquainted personally with a number of men who subsequently have assumed positions of increased responsibility in the States included in the Eastern Region.

I rather doubt these men have been impressed with either the profound nature of these talks or the breadth of knowledge which they displayed. Rather, I suspect my remarks have engendered a sort of confidence, based on the conclusion that anyone giving a talk of this sort isn't astute enough to do any real harm and, handled with patience, might conceivably be of a little help.

In looking at the regional business offices to get a picture of their place in the management of ARS, it might be well to divide our consideration into three parts: First, their establishment and the growth of their activities and in the scope of their responsibilities; Second, a brief look at their organizational structure, and third, a review of the services they render to and for field units.

I Establishment and Growth

The regional business offices were established formally by Dr. Shaw with the issuance of Administrative Memorandum No. 101.1, Supplement 30, dated May 27, 1955; just about five years ago. That memorandum designated the location of the four regional offices -- Albany, California; Minneapolis, Minnesota; New Orleans, Louisiana; and Wyndmoor, Pennsylvania. In that memorandum, also, the States within each region were delineated.

The final paragraph of that AM has a statement of policy with regard to the regional boundaries which has served as the guide in quite a few of the decisions which have had to be made. Dr. Shaw said "In approving ARS regionalization plans, the Department indicated that all ARS business activities should conform to the regional boundaries." In accordance with that requirement of the Department, ARS has adhered to the regional boundaries - without an exception which I can recall in the Eastern Region.

The operations of the regional business offices were begun on July 1, 1955, with an almost overwhelming workload and few personnel, lots of problems and few of the answers. Initially, we were concerned with purchasing, property accountability and all the related activities we call Administrative Services and the keeping of the financial records and payrolling virtually all field employees other than those in the former BAI units. So far as personnel was concerned, our activities were limited to "servicing" the field units of the former Bureau of Entomology and Plant Quarantine and the Bureau of Agricultural and Industrial Chemistry.

Delegations of authority in the fields of classification and employment were made first on a very limited basis and gradually increased until now the regional business offices have classification authority generally for all positions through GS-11 with responsibility for making recommendations on most of the higher graded positions and for employment actions through grade GS-13.

Quite aside from the day-to-day record keeping and other housekeeping functions of personnel, there is the broader and, we believe, the more significant field of personnel management. The importance of establishing satisfactory working relationships with all employees is now well recognized. What is not nearly so well known is how this can be done. There is much that we in the RBO can do to help you in this area, but it takes a lot more than mere techniques or programs. First of all, each one of us should be deeply concerned about every employee under our supervision. When this is so, the results can be -- and usually are -- astounding. Without it, no amount of effort can produce significant results of lasting value. We are always glad to hear from supervisors who wish to increase their effectiveness in the field of employee relations and have at times been able to offer suggestions which have been helpful.

As you know, increasing emphasis is being placed on such matters as training, particularly in the field of supervisory and executive development, and on employee relations. Effective January 1 last year, ARS initiated a program which affects directly each one of you. Since that date all promotions in the competitive service must be made in accordance with the new merit promotion program. The main objectives of this are (1) to make maximum use of the experience and skills of ARS employees, (2) to provide increased opportunities for their advancement and (3) to promote employee morale and encourage employee development.

In the field of training, the new Government Employees Training Act provides for training of employees not only within their own

agencies but in other agencies of the Federal establishment and in outside, non-Federal facilities. These programs are not simply statements on paper designed to improve the morale of an employee; nor even intended solely to benefit us as individuals, they are major steps in the development of a more effective, a more productive Agricultural Research Service. Through these programs ARS hopes to assure that young men of ability will be recognized early in their career and trained through the normal process of promotion and assignment. Much of this undoubtedly sounds familiar to you men. However, there have been in the past relatively few programs in ARS which have been planned and developed to the degree of the one in which you now are a part. Here I should like to add a word to you as supervisors in a "program" division. This recognition and development of outstanding employees at all levels is not a "personnel program" to be handled solely by personnel people. This is a responsibility -- and an important one -- of line supervisors. It is they who must be sold on it, participate in it, and, in fact, carry the initiative for it if it is to succeed at all as we hope.

Just one further word before we leave the Personnel field. The key "personnel officer" in any organization and at all levels is the supervisor. I sometimes think there are no duties so onerous or assignments so difficult or tedious that they cannot be carried out adequately and with good spirit if the supervisor is able to provide the incentive and leadership required. The poorest personnel "program" can be effective and the best ones fail if the supervisor does or does not respond to the challenge of the situation. The personnel folks in the RBO's and in Washington are specialists in their field but their most important function is that of supporting or "backstopping" the supervisor. They can in many instances relieve the supervisor of tasks which interfere with his operating job. We have a responsibility for doing certain things for supervisors as well as for helping them to do effectively those things they must do themselves.

We are very conscious of these roles of both the supervisor and personnel technician and any programs we develop or actions we take will be with this concept of the supervisor's role as our base.

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This process of expanding the authorities delegated to the regional business offices is still continuing so that we are now handling virtually all fiscal activities in the field. This does not mean there are no payrolling, accounting, procurement or personnel activities in the field stations. There is a lot of work in those areas being done in field offices and included in our major

objectives should be: first, the development of the closest possible coordination between those offices and ours under the present procedures; and, second, a critical review of those procedures to assure that we are getting the job done with maximum effectiveness, a minimum of duplication of effort, and at the lowest possible cost.

In the area of Administrative Services our activities likewise have been expanded. For example, the real property program of ARS is gaining momentum with the establishment of more accurate records of our property holdings and their value. Some idea of the scope of this program can be gained from the fact that in the Eastern Region alone we have almost 400 buildings at 30 locations, valued at twenty million dollars. This inventory, together with the inspection program which has been begun, are the beginning of what we hope will be a well planned, effective maintenance program. Here, too, the services of the RBO's are available to assist heads of field stations in the development of maintenance programs and improvement in the quality of occupied space.

A desirable change in the handling of unserviceable property at the field station level came with the discontinuance of the field boards of survey. This has the effect of simplifying the declaration of this type of property by making the accountable officer solely responsible for the determination as to its unserviceable condition.

While we are on the subject of property, I would like to add just a word concerning Automotive vehicles. In the Eastern Region we have almost 800 automobiles, station wagons and trucks. Last fiscal year these vehicles were driven a total of eight million miles and during the first nine months of the current year over six million miles. Inevitably, there were a number of accidents, some of which we feel could reasonably have been avoided. The greatest loss we suffer in these cases is not in money or even in the unavailability of the vehicles as inconvenient as that may be. The injury, or, as in one case, the death of a valuable, highly-trained individual whose services are badly needed is the type of loss we can least afford, to say nothing of the human values involved. Many of you men will have responsibility in controlling the use of vehicles and I would urge that you do everything you can to see that they are always in first class mechanical condition and that the drivers are competent and physically qualified to operate them. Also, it seems to me if we could get our folks who drive cars to show the same courtesy they do when hurrying along a crowded pavement we would be a very long way toward reducing the number of accidents.

There have been more than 2,500 drivers' permits issued to employees of our Region who, as part of their duties, operate Government vehicles. Under regulations issued by the Civil Service Commission in March 1956 all these operators must be licensed to drive by ARS. The issuance of driver's permits is no longer considered a routine task but is an important part of our safety program. For example, a new permit must be issued every three years only after the employee qualifies physically and his previous driving record demonstrates his capabilities and judgment as a safe and responsible driver.

Finally, with the issuance last month of AM 100.1 we now have a more precise statement of the responsibilities of the various segments of ARS for the application of sound management principles and practices to our program activities. I certainly wish to urge that you become familiar with that AM if you have not already done so.

Doubtless other speakers from the management group have referred to that document so I shall comment on only two points which have special significance so far as the relationships between the field office, program division headquarters and the regional business offices are concerned.

First, since we are in the field and in frequent contact with field stations it is probable that the bulk of the reviews of management practices and operations to which this memorandum refers will be made by the members of the staffs of the RBO's.

We anticipate these will be in the nature of management improvement reviews rather than inspections. This means that we shall look on these reviews as a joint effort to improve management activities and anticipate that most matters in which improvement is indicated will be resolved by mutual agreement on the spot.

Second, we plan to make the reporting process involved as simple as possible. Consequently, where agreement is reached at the field station our reports will consist merely of a notice that the review was made and the operations are in compliance with ARS requirements. If questions arise which cannot be settled at the station, as, for example, if the station head feels he does not have authority to take the recommended action, we shall endeavor to resolve the matter at the next level informally, perhaps by telephone, if this appears reasonable.

This, then, is a picture of the beginning and growth of the RBO's. With minor exceptions we are now fully staffed and have been given substantial delegations of responsibilities and authorities.

Consequently, we might look for a few minutes at these management units to note how they have been organized to perform these functions.

II Structure

The chart on the third page of the booklet you have in front of you will provide you a better picture of the RBO's in their present state of development than I can give you in any other fashion. Perhaps the most important point illustrated is that we have three "regional" officers in addition to the business manager. The significance of this is the fact that there are available in each RBO four key employees whose responsibility it is to be concerned primarily not with the day-to-day operations in our office but with the problems which arise throughout the entire region.

Not only are solutions sought for these problems, but the situations which give rise to them are explored with a view to removing the cause. Sometimes, of course, our suggestions can't be used because of circumstances of which we are not aware. We still have a great deal to learn about the various programs and their particular needs. However, quite a few instances have occurred in which we have been able to make some contribution along this line. These have ranged from rather far-reaching proposals which require study and clearance by the Administrative Divisions in Washington to relatively simple things which nevertheless solved an annoying problem.

Each of the Regional Officers recognizes that his primary concern must be with the problems which arise in the field or develop in the course of our working with the field units. We do not consider these requests as an extra burden or unwelcome intrusions in the flow of paper work with which all of us are confronted. On the contrary, we believe these to be one of our main responsibilities and the measure of success we have in meeting these needs is largely the measure of the value of the regional business offices.

III Services

What is the end product of all this and what can the RBO's do for you in the field?

First of all, we must go back to the primary objectives in establishing the regional offices which were: (1) to relieve program people of administrative detail so they could give more time to their professional duties, and (2) to expedite and improve the business activities of ARS.

In the course of pursuing these objectives other benefits have accrued in varying measure. There has developed a better understanding in ARS administrative units of the problems in the field and the circumstances and situations which give rise to those problems. Also, the RBO's have been the means through which a closer association between the personnel of field program units and those handling their administrative activities has been achieved. The mutual understanding and appreciation of the other fellow's views and problems which has been developed is having and will continue to have a profound and highly satisfying effect in all areas of administration. Also, the establishment of the RBO's has opened the door to a coordination of activities between ARS units and the interchange of information and experiences which will most certainly work for the betterment of all. While we are speaking of this, I must mention the close relationship which has developed between the RBO's and the Division administrative units. On this point, I can only say if the progress made here has been as satisfying to them as it has been to us, we are well on our way to building a close-knit, effective team which will be a credit to ARS and the Department.

One example of this cooperative effort is the training programs for field administrative personnel with which I'm sure many of you are familiar. Each of the regional business offices have held several meetings for the purpose of discussing current regulations and requirements with the administrative folks in the various field stations. This program which has been encouraged from the beginning by your Division was first tried at the Western Business Office. We at the ERBO have held four such conferences, having had the last only a few weeks ago, at which your Division was well represented both by field personnel and members of the Washington staff. The Workbook you have was prepared to provide background material for the discussions at that meeting.

For our part, we profit a great deal from these sessions by getting a greater insight into the problems faced by field employees, acquiring a better understanding of their viewpoint and developing a closer and more personal relationship with these folks. From all accounts the employees who attend -- and their supervisors -- have felt they, too, have received substantial benefits from this program.

In addition to the duties which are implicit in the delegations I have described earlier, we can and do provide a variety of other services. In procurement, we attempt to find better sources of supply and simpler ways of meeting your needs. The blanket purchase order, a convenient, work and time-saving device, has grown from a mere handful, issued for tires and tubes so that

these need no longer be stocked in attics and cellars to over 250 covering a wide variety of items. Units in your Division and others frequently call our attention to new situations where this means can be used to provide an answer to their need for the prompt delivery of recurring low value purchases.

In cooperation with the heads of field units, the use of field purchase orders, both Standard Form 44 and AD-38, has been expanded considerably in making purchases of other than non-expendable property generally less than \$100.00 in value so that now they represent well over half of the orders issued in the Eastern Region. This, too, has greatly reduced the problems which arise in meeting day-to-day needs at the field stations.

This ever-increasing use of the SF-44's and AD-38 purchase orders in the field will require increased attention and effort on the part of field supervisors to assure that purchases are made in accordance with the various laws, regulations and policies to avoid exceptions to improper purchases. It will also necessitate our including in our field station reviews a more detailed study of procurement operations to aid these officials in improving their purchasing techniques.

Our growing acquaintance with folks in the field on their own "home ground" is revealing more and more situations where we can be of help. I might add that it has been most gratifying to us to realize that with increasing frequency we are being requested to assist with problems as they arise or are anticipated instead of after some difficult situation has developed which requires immediate action to retrieve.

The regional aspects of our personnel program which have been pretty well covered earlier are being expanded as rapidly as possible. For example, you may recall if you see copies of our "Administrative Notes" that we now offer a retirement counselling service of which quite a few employees avail themselves.

This, then, is the story of the regional business office. Perhaps some of you will wish to raise questions concerning the information presented or on some other phase of our operations. If so, I'll do my best to answer them though I'll start by saying that if you accept the common definition of a specialist as "one who progressively knows more and more about less and less," I'll ask you to consider the plight of the business manager who is a generalist and thus in the position of steadily knowing less and less about more and more.

